



# **The Jones Act Under NAFTA and Its Effects on the Canadian Shipbuilding Industry**



Mary R. Brooks

**Research Paper**

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## CONTENTS

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<b>vi</b>	<b>About the Author</b>
<b>vii</b>	<b>Executive Summary</b>
<b>1</b>	<b>Introduction</b>
<b>2</b>	<b>The Merchant Marine Acts of 1920 (the Jones Act), 1936 and 1970</b>
<b>4</b>	<b>The Shipbuilding Industry in the Early 1980s</b>
<b>5</b>	The Canadian Industry
<b>6</b>	The US Industry
<b>9</b>	International Shipbuilders: The Global Market
<b>10</b>	The State of the Industry Prior to the Canada-US Trade Negotiations in 1987
<b>10</b>	<b>Canada–US Negotiations and Impacts</b>
<b>10</b>	The Canada–US Trade Agreement
<b>12</b>	NAFTA and the Jones Act
<b>13</b>	World Trade Organization and the General Agreement on Trade in Services
<b>13</b>	Assessment of the Cost to Canadian Industry
<b>16</b>	US Impacts
<b>19</b>	What Has Been the Impact of the Jones Act?
<b>22</b>	<b>The Global Industry Today</b>
<b>25</b>	<b>Looking Forward: Policy Positions for the Future</b>
<b>27</b>	Recommendations for a Canada–US Bilateral
<b>28</b>	Recommendations for NAFTA II
<b>28</b>	Recommendations for Maritime Transport Negotiations
<b>29</b>	Final Comments
<b>30</b>	<b>Acknowledgment</b>
<b>31</b>	<b>References</b>

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## APPENDICES

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<b>34</b>	<b>1</b> • Specific Support Programs in the US in 1984
<b>35</b>	<b>2</b> • Key Canadian Yards in 1980 and 2003
<b>36</b>	<b>3</b> • Apparent Canadian Market for Shipbuilding and Repair Industry
<b>37</b>	<b>4</b> • US Marine Support Programs in Place in 2003
<b>38</b>	<b>5</b> • Active US Shipbuilding Bases, By Region, 1982 and Status by 2003
<b>39</b>	<b>6</b> • Major US Yards 2003 by Region
<b>41</b>	<b>7</b> • Cabotage and Local-Build Provisions (Selected Countries 2001)

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## LIST OF TABLES AND FIGURES

---

- 6** Table 1 • Comparative Shipbuilding Prices 1975-1983
- 6** Table 2 • Shipbuilding Employment and Productivity 1962-1985
- 7** Table 3 • 1983 Shipbuilding Costs
- 7** Table 4 • Shipyard Cost comparisons
- 8** Table 5 • Merchant Ship Orders Awarded to US shipyards, 1973-1983  
(for ships of 1,000 gross tons and over)
- 8** Table 6 • Annual Operating Costs For 30,000 DWT Containerships (in US\$000)
- 11** Table 7 • Canada's Trade Balance in Shipbuilding and Repairing in C\$000
- 14** Table 8 • Leading Owners of Vessels as of December 31, 2002
- 14** Table 9 • Leading Owners of Vessels on Order Summer 2003
- 17** Figure 1 • US Domestic Transport Performance
- 17** Table 10 • A Snapshot of Yard Newbuildings (2003)
- 20** Table 11 • A Profile of the Jones Act Fleet (2002)
- 21** Table 12 • Profiles of US Flag Vessels Over 300 Net Tons Built 1988-2001
- 21** Table 13 • Estimates of US Losses From Liberalization (change from 1999 benchmark)
- 22** Table 14 • Shipbuilding in Japan
- 23** Table 15 • Shipbuilding in Korea
- 23** Table 16 • Volume of Newbuilding Completions in China

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Dr. Brooks received her undergraduate degree from McGill University (1971), her MBA from Dalhousie University (1979) and her PhD in Maritime Studies from the University of Wales (1983).

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## EXECUTIVE SUMMARY

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Over the past 40 years, the Canadian shipbuilding industry, like many of its counterparts in other countries, has been undergoing a period of restructuring. Through this time, the global industry has experienced a significant contraction and the Canadian industry has focused on strategies that position the survivors to serve military and niche markets. The Canadian shipbuilding industry has been effectively excluded from selling vessels to be used in American coasting trades by the Jones Act (the *Merchant Marine Act of 1920*) and its subsequent revisions. This protection of coasting trade is contrary to the overall liberalized trade intentions of the two primary trade agreements Canada has with the United States (US).

This paper explores the foundations of the Jones Act, and the state of the shipbuilding industry prior to and after the negotiations of the Canada-US Trade Agreement and the North American Free Trade Agreement, drawing some conclusions about the impact of the Jones Act on the industry. It poses possible policy positions for the Canadian government as it moves forward in its relationship with the US. It will also examine very briefly that other industry affected by the Jones Act, the maritime transport industry.

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## INTRODUCTION

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Shipbuilding demand is a tertiary demand, built on the secondary demand for shipping services arising from the primary demand for transport. Ships can be broadly classed into four categories: military, cargo, passenger (including leisure), and specialized (fishing and research vessels). To understand the demand for shipbuilding, it is important to distinguish these groups. It is common practice for a nation to retain control of its sovereignty by building the first of these. The others form the basis of a possible export market for a nation's shipbuilders.

The market for cargo vessels has changed vastly over the years (Brooks, 2003). One of the drivers of investment in shipping is the potential for economies of scale. Therefore, shipyards have been continuously plagued by excess construction capacity at the smaller end as ever-larger vessels are used to carry the world's commodities and manufactured goods. Cargo transported by ship falls into two broad categories—bulk and unitized cargo. The former usually travels via tramp vessels and includes both liquid (e.g., crude oil and oil products) and dry bulk, the largest of which are iron ore, grain and coal. Unitized cargoes are those “packaged” into a more manageable form for transport, be it consolidation on a pallet or stowage in a standard container.

In both cargo segments, the average vessel deployed today on the key trade routes of the world is much larger than the size capable of being built in Canada. For example, in the tanker business after World War II, the key limit on vessel size was the transit draft of the Suez Canal at 10.4 metres. The upper limit of vessel size in the tanker sector was reached in 1980 with the lengthening of the Ultra Large Crude Carrier *Seawise Giant*, at 564,739 DWT;<sup>1</sup> this vessel required a draft of 24.6 metres. Larger vessels have not been achieved because of port depth constraints. A similar phenomenon occurred in dry bulk shipping. Although the larger vessels were less flexible than their predecessors, dry bulk ships (with the exception of iron ore carriers) in excess of 200,000 DWT were common by the 1970s.

On the container vessel side, the industry is still witnessing dramatic changes in vessel size. Once the industry determined that dimensions of the Panama Canal artificially constrained the size of vessel possible (at about 4,500 TEU<sup>2</sup>), larger “post-Panamax” vessels were introduced to the market. The first five post-Panamax vessels were ordered by American President Lines for delivery in 1988. Since then, more, larger ships have been ordered in an effort to reduce per-TEU ocean costs. While technically there are no limits to the production of a 15,000 TEU container ship, the reality depends on its commercial deployment. This is determined by the length of the trade route, the port cargo-handling capabilities on the route, and port draft. The same can be said of the cruise industry today, as these floating hotels also test the upper boundaries of size in the quest to become a destination in their own right.

Meanwhile, on the non-cargo side, most military powers reserve the building of military vessels for their own yards, wishing to maintain national control of the specialized shipboard and weapon technologies, and control over the supply of vessels. Todd (1985) noted that defence vessels are the core market on which developed countries' national shipbuilding industries are maintained. Furthermore, he notes (Todd and Lindberg, 1996: 31) “there is the mismatch incident to countries' insistence on deploying significant naval forces in spite of the absence of significant indigenous industrial capacity” (read shipyards to build those forces). The disconnect between strong navies and weak mercantile marines is also reported. Both of these contribute to the question: is the shipbuilding sector a part of the shipping (maritime transport) industry, the manufacturing (industrial) economy or a part of nation's defence capability? How a country answers to the question predicts the support the industry will receive from its government.

For nations without the yard capacity to compete for the shipbuilding contracts for the largest of the vessels, there is a glut of capacity available to build smaller ones and competition is stiff. The contested market in which Canada's shipyards

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1. DWT = deadweight tonnage is a measure of a vessel's carrying capacity.

2. TEU = twenty-foot equivalent unit is a measure of cargo-carrying capacity for containerships; one TEU is a standard 20-foot box.

compete becomes vessels for coastal and regional transport (including the feeding of the larger intercontinental vessels), specialized vessels (e.g., research, icebreaking), local ferries and fishing vessels. These vessels make up a very small percentage of the total world order book, and an even smaller part of the world fleet.

The purpose of the paper is to examine the origins of the Jones Act and to evaluate, as best as possible given publicly available data, the impact of the Act on the Canadian shipbuilding industry. While its focus is the industry in North America, it cannot fully explore this market without placing the industry in its broader, global context. The paper seeks to understand the state of the industry prior to the *Canada-US Trade Agreement* in order to examine the impacts of that and subsequent trade agreements. It is not the intention of the paper to examine what shipbuilding policy is in Canada's widest economic interest or the strategic military or political interests that might be served by financial support for the industry. Furthermore, the paper does not explore how important the presence of ship repair capacity is to the competitiveness of Canadian ports. While these aspects raise good questions that could have been addressed in the paper, they are not within the terms of reference for the paper and, indeed, would require further data collection that was not envisaged within the timeframe for the work.

This paper begins by reviewing the US legislation governing the carriage of domestic cargoes, as it is central to the trade barriers experienced by Canadian shipyards in the NAFTA marketplace. It examines the rationale for US legislation, bringing the reader to the mid-1980s, the period prior to the negotiation of the *Canada-US Trade Agreement*. Then it describes the state of the shipbuilding industry at that time, so that the nature of the shipbuilding market can be fully appreciated, and the roles played by Canadian and US yards put into context. The paper next examines the importance of shipbuilding in the context of, first, the Canada-US free trade negotiations and, later, the NAFTA negotiations, before addressing the costs of the existing trade barriers to the Canadian industry. It concludes with possible policy options for the Canadian government in the future.

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## THE MERCHANT MARINE ACTS OF 1920 (THE JONES ACT), 1936 AND 1970

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Chapters 24 and 27 of the US *Merchant Marine Act of 1920* (also known as the “Jones Act” after its sponsor, Senator Wesley Jones)<sup>3</sup> state that cargo may not be transported between two US ports unless it is transported by vessels built in the US, and owned by citizens of the US. The Act also covers a variety of other maritime issues, including harbour dredging, compensation to seamen, and government loan guarantees to shipbuilders.

To understand the US position on coasting trade (marine cabotage<sup>4</sup>), it is important to realize that the Jones Act was not the beginning. Prior to the American Revolution, the English had passed navigation laws to control colonial shipping and protect transport for **English** vessels. After the Revolution, the First Congress immediately set out to raise revenue and to protect US shipbuilding and shipping. The first act, in July of 1789, was a tariff placed on imported goods, with tariff reductions for those using vessels built in the US and wholly owned by US citizens. This was quickly followed by one in September of 1789, defining a US vessel as one built in the US, owned by US citizens and registered under the US flag.<sup>5</sup> The extension of this protectionism beyond cargo occurred in 1886 with the passage of the *Passenger Vessel Services Act*, requiring passenger trade between two US ports to be undertaken in US-flag, US-built and US-crewed vessels.

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3. 46 U.S.C. 883, 19 CFR 4.80 and 4.80(b). Although the 1920 Act requires percentages of employees to be American citizens, the requirement for the crewing of vessels to be by American citizens becomes more explicit in the 1936 legislation (see the box on page 3).

4. In most countries, the practice of transporting or shipping goods between two points is called cabotage and the requirement to use nationally owned vessels is part of the nation's marine cabotage regulations; in Canada, marine cabotage is called coasting trade.

5. For further historical detail see Bess and Farris (1981) or Leback and McConnell (1983).

According to Frankel (1980), current US policy grew out of the experience faced by the US during World War I. The country had virtually no merchant marine capacity when war was declared and was unable to provide either the services needed for military purposes or the maintenance of its economy. The *Shipping Act of 1916* set about to remedy this situation and, by 1920, the US government had acquired or built more than 1,750 ships. This fleet was to be disposed of, and the original purpose of the *Merchant Marine Act of 1920* was to effect this disposal, and to establish a framework in which the fleet could operate profitably with private sector ownership.

In the period between the wars, few new vessels were added to the US fleet. By 1936, according to Jantscher (1974), most of the vessels built or acquired during World War I were nearing the end of their useful economic life, and Congress was concerned that the US would be “gravely handicapped” in competition with the vessels of other nations. “Major objectives of the *Merchant Marine Act of 1936* were to create a substantial fleet of US-flag merchant ships, to build the ships in US shipyards, and to ensure they were owned and crewed by Americans” (Congressional Budget Office, 1984: 14). Thus the *Merchant Marine Act of 1936* introduced a program of vessel construction aids still largely in place today. Those aids, administered by the Maritime Administration of the US Department of Transportation (MarAd) led to the US being the second largest shipowning nation in the world as of September 1, 1939 (Jantscher, 1974: 4).

Efforts to revive the industry after World War II were not successful, and the shipbuilding industry began a long decline. Outside the US, the war-ravaged shipyards of Japan were rebuilt; they were new, modern facilities highly competitive with US yards.

<b>MERCHANT MARINE ACT, 1936</b>
SEC. 101. FOSTERING DEVELOPMENT AND MAINTENANCE OF MERCHANT MARINE (46 APP. U.S.C. 1101) (2002)
<p>It is necessary for the national defense and development of its foreign and domestic commerce that the United States shall have a merchant marine (a) sufficient to carry its domestic water-borne commerce and a substantial portion of the water-borne export and import foreign commerce of the United States and to provide shipping service essential for maintaining the flow of such domestic and foreign water-borne commerce at all times, (b) capable of serving as a naval and military auxiliary in time of war or national emergency, (c) owned and operated under the United States flag by citizens of the United States insofar as may be practicable, (d) composed of the best-equipped, safest, and most suitable types of vessels, constructed in the United States and manned with a trained and efficient citizen personnel, and (e) supplemented by efficient facilities for shipbuilding and ship repair. It is hereby declared to be the policy of the United States to foster the development and encourage the maintenance of such a merchant marine.</p>

By 1970, there was a new Act, the *Merchant Marine Act of 1970*. The intention of this Act was to re-energize the US shipbuilding industry by building 300 merchant ships over a 10-year period. The *Merchant Marine Act of 1970* also did not stand as a solo effort to support American shipbuilding. Other supporting legislation included the *Cargo Preference Act of 1954* and the *Strategic Petroleum Reserve Program of 1977*. According to Hazard (1982), the focus of support

for the industry in the 1970s moved away from a strictly military concern to the broader energy agenda, by ensuring national security through assured access to foreign sources of oil and natural resources in a time of emergency. This view was also supported by Moyer and Handerson (1974: 15):

*A heavy reliance on ships to provide energy imports, when national policy is clearly directed toward substantially reducing the level of these imports throughout the next decade, seems to be most inadvisable, without other compelling economic/national security justifications.*

However, with the oil embargo in 1973 and the subsequent collapse in world shipping demand, the intention was less than successful. Moyer and Handerson (1974: 15) noted:

*Our critical evaluation of the logical bases put forward for present Marad programs suggests that national security considerations provide the strongest justification for the program. It has been shown that balance of payments and employment benefits cannot provide a satisfactory rationale for the current status and trend of the US maritime program. These benefits need to be compared with similar benefits accruing from other “public works” type programs before any real net economic benefit may be imputed. Such an explicit comparison of alternatives has never been carried out. Commercial advantages were also shown to be rather poorly defined, and perhaps nonexistent.*

Further, Hazard (1982: 38) noted that “within the lifetime of the Act of 1936, the United States has changed from a protectively withdrawn nation to an internationally oriented world power with major commitments to the international economic order.” The US has been unable to justify its policies on economic grounds (well documented by Hazard, 1982) and, in spite of considerable debate in the years since, has not exhibited the political will to alter the myriad protectionist policies, from shipbuilding support to cargo preference rules, that form the US maritime policy today.

While the intention of the Act was broadened in 1970, it continued to focus on supporting a shipbuilding industry structured around US-owned, crewed and built vessels. The full array of support programs available in 1984 can be seen in Appendix 1. Yet Leback and McConnell (1983: no page) concluded that the Jones Act fleet was not

*rebuilt, increased or modernized as a result of the 1936 Act or any other legislation. The domestic fleets were rebuilt and modernized through two massive Government shipbuilding programs during World Wars I and II.*

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## THE SHIPBUILDING INDUSTRY IN THE EARLY 1980S

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**W**orld shipbuilding output peaked in 1976-'77 and then declined severely over the next five years. By the early 1980s, the world had entered a global recession that led to significant destabilization and dislocation in the shipbuilding industry. There was an overall decline in the demand for ships and shipping services. Many owners, rather than ordering new vessels, opted to extend vessel life and the subsequent repair business used only some of the excess shipyard capacity. Critical, though, was the rise of new competitors, in particular the Republic of Korea and the People's Republic of China; they became more powerful due to lower labour and production costs and more attractive financing packages. North American and European yards had not done well in the period after World War II, and the industrial environment was about to become significantly worse.

## THE CANADIAN INDUSTRY

As is the case for US domestic marine traffic, Canadian marine cargo moving between two Canadian ports must be transported in a Canadian flagged ship. While it is possible for foreign flag vessels to enter the Canadian domestic trades under waiver (when no suitable Canadian flag ship can be found), the duty payable on those foreign vessels adds 25 percent to the capital costs of Canadian domestic shipping. Those costs are then passed on to Canadian taxpayers in the form of higher freight rates on the goods transported on Canadian-registered ships. Canadian flag vessels *must* have crews with Canadian certificates, and such certification is available only to Canadian citizens and permanent residents, adding to the operating cost of a Canadian flag vessel as well. According to Hodgson and Brooks (2003), the requirement to use Canadian crews did not change with the revisions to the *Canada Shipping Act* passed in 2001. Unlike the US legislation, there is no mandatory requirement to use a Canadian-built ship; as long as the owner is prepared to pay the 25 percent duty on importation of the ship, the ship may be foreign built.

In Canada, production subsidies to the shipbuilding industry were introduced in 1961 at a rate of 40 percent, and this rate declined by one percent a year until 1981 (Trebilock *et al.* 1990: 91). By then, the Canadian shipbuilding industry was suffering from a real decline in world ship prices, an international recession, a decline in shipping demand, and intense competition from international rivals; Canadian yards were viewed as outdated when compared to overseas competitors (Shepherd, 1983). In addition, domestic markets for tankers, lake carriers (dry bulk), cargo vessels and fishing boats were down due to the recession. Employment at Canadian shipyards was well below capacity, with the greatest effect felt in the economies of Eastern and Central Canada. By 1983, all yards in Atlantic Canada, for example, were operating at less than 20 percent capacity (Shepherd, 1983). In terms of efficiency, Canadian shipyards were equal or superior to European yards, having undergone government-assisted retooling in the 1970s, but not as efficient as those in Japan or South Korea (Shepherd, 1983). Imports from these and other international competitors had a negative impact on the Canadian shipbuilding industry. Appendix 2 contains a list of Canadian shipyards in 1983.

While all of the major yards used modern computing capacity for vessel design, the primary challenge facing the Canadian shipbuilding industry was the increasing pressure of international competition, especially from those competitors with the ability to offer favourable financing packages, or so it was argued. When financing packages offered by European, Japanese and US yards were compared by Shepherd (1983: Table 7, 53), the financing concessions appeared to be largely for vessels used in domestic shipping; export sales were made using standard OECD terms. While the standard OECD terms provided for credit terms for eight years at 8.5 percent interest for 80 percent of the price, the Export Development Corporation (now Export Development Canada) was offering interest at 12-14 percent. Canada had not put in place a facility that would match terms under the OECD Understanding (a situation that has since changed). To focus on the export credit issue would be to ignore a critical issue of far greater importance: the problem of competing against the domestic subsidies offered by other nations.

To illustrate, Japanese owners buying vessels for domestic use received a subsidy of 20 percent of building costs in 1980. In the UK this was 30 percent in 1977, and was reduced to 23 percent after it joined the European Economic Community. Brazil offered subsidies of 25 percent. (The myriad of US support programs was quite complex and is discussed in more detail in the next section.)

Canadian yards too were quite dependent on subsidies to remain in business. In the early 1980s, subsidy rates were set at nine percent under the Shipbuilding Industry Association Program (down from 14 percent in 1975). Additionally, under the Performance Improvement Grant, if the shipyard could prove a purchase would increase the performance of the yard, it was eligible for a three percent credit of the cost of the ship (Shepherd, 1983: 50-51). Even with this financial support, Canadian yards were internationally uncompetitive in terms of price per DWT (see Table 1).

By 1988, the Economic Council of Canada (1988:86) concluded, based on the data in Table 2, that the industry, in



**Table 1: COMPARATIVE SHIPBUILDING PRICES 1975-1983**

Country	1975	1976	1977	1978	1979	1980	1981	1982	1983
CANADA	473		199						
CHINA						239	92	112	
JAPAN	100	101	130	133	65	64	48	75	48
S. KOREA	172			124	111	63	66	49	25
USA		373	356				221		
W. GERMANY	190	194	180	300	1,084			89	66

Source: Adapted from Todd (1985), Table 3.8 p. 78 by indexing the US\$ per DWT to Japan prices in 1975=100.

**Table 2: SHIPBUILDING EMPLOYMENT AND PRODUCTIVITY 1962-1985**

		Percent Average Annual Rate of Growth in			
		Shipbuilding & Ship Repair		Manufacturing	
Year	Average Number of Employees	Employment	Output per Person-Hour	Employment	Output per Person-Hour
1962-69	17,577	0.6	3.1	2.7	3.7
1970-79	14,737	0.9	1.2	1.1	2.7
1980-85	13,935	-5.3	2.6	-0.7	1.3

Source: Selected parts of Table 6-4, Economic Council of Canada (1988), p. 86.

comparison with other Canadian manufacturing sectors, was “extremely weak” and could be regarded “as a declining industry.” In spite of an improvement in productivity in the industry between 1980 and 1985, output and growth were less than that achieved in other manufacturing industries.

## THE US INDUSTRY

The US shipbuilding industry in the US during the early 1980s faced many of the same challenges. It was also suffering from the worldwide downturn in demand for new vessels, and struggling to compete with international companies (Congressional Budget Office, 1984). Higher wage and material costs, less efficient facilities, higher crew costs and the strength of the American dollar were the culprits noted south of the border. “[P]rices of cargo ships built in Japan or Korea range as low as one-third of the prices of the same ships built in US yards” (Congressional Budget Office, 1984: xx). (See Tables 3 and 4 below.) US ship operators, however, were still influenced to purchase US-built ships due to government benefits such as subsidy payments, cargo preference, tax benefits, and access to domestic trade. Identified trends in the shipping industry during this period were fewer subsidies, a shrinking fleet and continuing national security concerns. “Since August 1982 [until 1984], US shipyards received no new orders for commercial

**Table 3: 1983 SHIPBUILDING COSTS**

Country	Containership (2,450 TEU)	Bulk Carrier (35,000 DWT)	Tanker (90,000 DWT)
US Built	132.0	69.0	96.0
Japanese Built	50.8	22.5	34.3

Source: US Maritime Administration as cited by Congressional Budget Office (1984), p. 27.

**Table 4: SHIPYARD COST COMPARISONS**

Costs	US	Japan	Europe
Wages (US=100)	100	74	83
Man Hours Per Ship (US=100)	100	46	57
Steel Prices (in dollars per ton)	535	386	331-353

Source: Congressional Budget Office (1984), p. 42.

ocean-going ships; only the Navy has provided work” (Congressional Budget Office, 1984: xx).

In 1982, the US had one of the largest shipbuilding industrial bases in the world. There were approximately 700 facilities, including 101 private shipyards (employing 158,500 workers), and nine government-owned facilities employing 73,256 (Congressional Budget Office, 1984: 39). The position was not a sustainable one.

*The shipbuilding industry, which mobilized to produce an average of over 1,200 merchant ships annually in World War II, produced only 41 commercial ships in 1973, three in 1982, and none in 1983. (Congressional Budget Office, 1984: 3).*

By 1982, foreign financing packages and subsidy agreements were having a negative effect on US shipbuilders. The response by the US federal government did not ameliorate the situation. By 1984, the Construction Differential Subsidies had been cancelled, Operating Differential Subsidies were to be paid only on existing contracts, and no new subsidies were introduced. The government moved to enhance the military usefulness of the current fleet and began purchasing particular ships rather than building them. Efforts were concentrated on lowering or maintaining maritime supply costs; this too did not encourage new ship construction. By 1983, the US had 573 privately owned ships, controlled 5.8 percent by weight of ocean-borne foreign trade and was ranked 11th in the world for fleet size (Congressional Budget Office, 1984: 3). The steady decline in US-built commercial shipping is recounted in Table 5.

Not only was the capital cost of a US-built vessel higher, but operating cost disadvantages would plague the owner over the ship’s lifetime. One of these was the requirement for a US crew, the impact of which can be seen in Table 6. A further disadvantage to US shipbuilders was the cost of fuel for US-built ships; these ships were usually propelled by steam engines in contrast to the diesel propulsion systems of most foreign-built ships. The steam turbine, which provided more speed but also required more fuel, was better suited to military requirements than commercial ones but had the disadvantage of increasing operational costs.

**Table 5: MERCHANT SHIP ORDERS AWARDED TO US SHIPYARDS, 1973-1983 (FOR SHIPS OF 1,000 GROSS TONS AND OVER)**

Year	Total Number of Ships	Gross Tonnage
1973	41	1,978,000
1974	15	1,113,300
1975	11	507,900
1976	16	339,400
1977	13	265,500
1978	30	394,000
1979	21	487,200
1980	7	116,200
1981	8	148,000
1982	3	19,900
1983	0	0

Source: Congressional Budget Office (1984), p. 43.

**Table 6: ANNUAL OPERATING COSTS FOR 30,000 DWT CONTAINERSHIPS (IN US\$000)**

Where Built	UNITED STATES	JAPAN	JAPAN
Crew Nationality	UNITED STATES	UNITED STATES	SINGAPORE
Propulsion System	STEAM	DIESEL	DIESEL
Wages	3,780	3,780	570
Subsistence	124	124	53
Supplies	247	247	158
Maintenance	1,050	1,050	471
Insurance	933	933	328
Other	77	77	30
Fuel	5,500	4,600	4,600
Capital	14,200	5,200	5,200
Cargo/Port	4,600	4,600	4,600
Total	30,511	20,611	16,010
Cost per Delivered Ton	61	41	32

Source: Adapted from Congressional Budget Office (1984), p. 31.



In terms of government financing, a financial institution would usually buy a ship and then lease it to a ship operator. Up to 87.5 percent of the price was guaranteed by the government; the remainder could be financed through investment tax credits, initial depreciation and potentially funds from the Capital Construction Fund (Congressional Budget Office, 1984: 39).

In the mid-1980s, the US admitted into the US cabotage trades three large tankers from the international fleet with a negative impact on the US shipbuilding industry and displacing a number of smaller, more modern tankers. In his examination of the event, Pollack (1991: 50) supported observers' conclusions that US cabotage policy was driven by special interest groups, noting that "US policy towards the nation's merchant marine provides a fascinating case study of misguided decision-making."

## INTERNATIONAL SHIPBUILDERS: THE GLOBAL MARKET

The most prominent shipbuilders outside of North America during the early 1980s were those in Western Europe, Japan, South Korea, China, Taiwan, and Brazil. The global recession was taking a toll on all shipbuilders; however, some were not as severely affected as those in Canada and the United States. After the oil embargo of 1973, the demand for tanker ships was sharply reduced from 196.9 million DWT in 1974, to 9.7m GRT<sup>6</sup> in 1979, to 7.0m GRT in 1983 (Todd, 1985: 10). Countries heavily involved in tanker construction were more adversely affected than those producing other types of ships. The sharp reduction in demand for tankers was especially harsh for those producing them, as it was not common for countries to be well diversified in regards to the type of ships built. Also, many ship owners were edging away from the tradition of purchasing domestically and turning to cheaper foreign alternatives.

According to Todd (1985), **Japan** dominated world shipbuilding markets until the early 1980s. It held 55 percent of the world order book in 1983 and was responsible for 43 percent of non-passenger world tonnage in 1984. Due to the recession, shipbuilders were encouraged by government to follow an anti-recession cartel to limit competition among themselves. A government agency was set up to purchase 35 percent of the existing facilities. In addition, employment was reduced from 361,000 in 1974 to 230,000 in 1980. As a nation, Japan had relied heavily on tankers to keep its shipyards busy; there was a concerted effort by shipbuilders in Japan to diversify and build other types of ships such as bulkers. Throughout the early 1980s, the Japanese yards were very innovative (Todd, 1985: 357) and Japanese owners persistently ordered from their own industry to fulfill the needs of the domestic national fleet.

The shipbuilding industry in **Western Europe** during the early 1980s was in a similar situation to the North American one. It was dependent on government assistance for survival. In 1984, Denmark and the UK of all European countries had the largest portions of the world order book at 1.6 percent and 1.4 percent respectively (Todd, 1985: 3). From 1975 to 1984, at least 78 European shipbuilders failed (Todd, 1985: 362). Compared to other shipbuilding nations, Western Europeans were known to be technological laggards. In order to deal with excess capacity, European shipyards reduced employment and turned to the state for help; some were acquired by the state. European yards had the advantage, however, of building more sophisticated ships such as those for dry cargo and/or container tonnage, thereby specializing in a niche that dulled the pain of consolidation.

Several nations entered the shipbuilding industry during this period, most notably the **emerging nations** of South Korea, China, Taiwan and Brazil. They fared well as shipbuilding is a labour-intensive industry and their labour costs were much lower than those in Western Europe and North America. By 1984, these four had a combined 27.2 percent share of non-passenger tonnage production (Todd, 1985: 3), with Korea being the largest at 17 percent.

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6. GRT = gross registered tonnes is a measure of vessel size and used largely by port authorities in setting dues for the provision of port services.

## THE STATE OF THE INDUSTRY PRIOR TO THE CANADA-US TRADE NEGOTIATIONS IN 1987

By the early 1980s the Canadian and US shipbuilding industries were in serious difficulty. Both were seeking to compete in a changed world, one where fewer large vessels were being produced and where military contracts and subsidies were favoured tools widely used by governments to maintain national capacity. As Todd (1985: 77-79) noted:

*Of all the nations represented in 1975, the least price-competitive was Canada, which was encumbered with a price level [in US\$ per dwt] more than four times the Japanese figure. High labour costs and limited production facilities account in part for the Canadian standing.*

This over-dramatizes the low level of Canadian competitiveness. While this was true in 1975, by 1977, the last year for which Todd had Canadian data, Canadian prices in US\$ per DWT had fallen to only 1.5 times Japanese prices, and were slightly less than one-half of US prices! By 1982, costs had been extracted out of the operation of Japanese, Korean and UK yards and China had entered the market. The Western Europeans had survived only by dint of subsidy (Todd, 1991: 86). US yards faced the reality that owners serving international trades purchased elsewhere and 55 yards closed in the decade after 1978 (Todd, 1991: 95). Canadian and US yards were left to survive on niches. In Canada, that was government contracts (96 percent of 1986 orders), fishing fleets, coastal and Great Lakes shipping, and offshore energy projects (Todd, 1991: 115). The industry in neither country was in good shape.

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## CANADA-US NEGOTIATIONS AND IMPACTS

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Protection of coasting trade, as found in the Jones Act and the *Canada Shipping Act*, is contrary to the overall liberalized trade intentions of modern free trade agreements. Despite repeated efforts to break a deadlock on cabotage provisions, neither the OECD nor the World Trade Organization has been able to make progress in liberalizing domestic marine or air cabotage, although there has been considerable success in the freeing of international trade in marine services. Both of the two primary trade agreements Canada has with the United States, the *Canada-US Trade Agreement* (CUSTA) and the *North American Free Trade Agreement* (NAFTA), reflect the reality of protectionism in marine cabotage.

## THE CANADA-US TRADE AGREEMENT

Externally, Canada has long attempted to encourage liberalization of US domestic shipping policy. One of the many issues in the CUSTA negotiations was the treatment of trade in services. Coverage did not extend, nor was there any effort to do so, to trade in maritime transport services (Hart, 2004). Similarly, trade in services was on the Canadian agenda for discussion at the NAFTA negotiations, but US intransigence on cabotage rules remained firm throughout both sets of negotiations.

Prior to the negotiation of the *Canada-US Trade Agreement*, a ship registered under the flag of the United States had to be owned by US citizens (with a 75 percent ownership minimum). In Canada, a Canadian ship could be owned by Canadian or **Commonwealth** citizens, or a company incorporated in Canada (or a Commonwealth country) and having its principal place of business in the Commonwealth. This meant that a Canadian flag ship could be owned by a relatively wide circle of interests. Post-negotiations, a US citizen (or US company) could transform itself into a company eligible for the Canadian register, and bring a ship that is US built into the Canadian register, and operate

it in Canadian coasting trade as long as the vessel is crewed in Canada and meets Canadian current regulations and standards (Ward, 2003).

Prior to the agreement, there was a tariff on US-built ships (as there was on ships from any non-Canadian source) of 25 percent, if they were being imported into Canada for use in the coasting trade. CUSTA removed the Canadian tariff against US-built ships but not against ships from other non-Commonwealth countries. Tariff removal on Canadian ships for the US market was also phased in over 10 years; here it was less valuable, as the ships used in coasting trade must be built, flagged and crewed in the US, and owned (75 percent minimum) by US citizens. While it would appear that Canadian yards lost the “protection” of tariffs in competition with US yards, the point was moot as, at the time, the industries in both countries were not competitive. It has not been possible to identify those vessels built in the US currently in use in Canadian coasting trades, having been imported with zero duty, although there are suggestions that this may have been the case for some vessels used in the offshore energy business, and there are US imports noted in the trade balance figures in Table 7. (Disaggregation of the data by vessel type indicates a broad spectrum of vessel types being purchased and the picture is far from clear as searches using HS Codes are not comparable with those using the NAICS single code for the industry.) What is clear is that sales to the US are a relatively stable component in a volatile business.

As Canada moved forward with other free trade agreements, it has modeled them on CUSTA. Now, the same tariff consideration applies to Mexico, Chile, Costa Rica and Israel.

**Table 7: CANADA’S TRADE BALANCE IN SHIPBUILDING AND REPAIRING IN C\$000**

Trade With		1998	1999	2000	2001	2002
United States	Exports	17,935	27,947	34,294	36,356	36,688
	Imports	35,101	56,542	12,015	617,904	11,235
	Balance	-17,167	-28,596	22,278	-581,548	25,453
Others	Exports (1)	7,855	156,969	7,871	19,736	9,599
	Imports	243,346	10,007	547,684	122,740	127,808
	Balance	-235,491	146,962	-539,813	-103,003	-118,209
All Countries	Exports	25,789	184,916	42,164	56,092	46,287
	Imports (2)	278,447	66,549	559,699	740,644	139,042
	Balance	-252,658	118,367	-517,535	-684,552	-92,755

Note: (1) In 2002, the two largest non-US buyers of shipbuilding and repairing were Kazakhstan (lifeboats) and Mauritania (floating platforms); in 2001, large purchases were made by buyers in Kazakhstan (not specified), Panama (tugs) and France (pleasure craft); in 1999, Brazil (floating platforms), and 1998, Turkey (floating structures). Before 1997, the sales to other countries were very small.

(2) On the import side, Canadians are bringing in a wide variety of vessels, but the biggest values are tankers in 1998 (C\$226 million), floating docks in 2000 (C\$396 million), and drilling rigs in 2001 (C\$598 million).

Source: Statistics Canada Trade Data Online, NAICS 336611, <http://strategis.ic.gc.ca>

## NAFTA AND THE JONES ACT

Prior to the NAFTA negotiations, the coasting trade in both countries was reserved for national flag carriers. During the negotiations, Canada sought liberalization of the cabotage regime and aggressively pursued opening of the maritime sector, but the US had not changed its position on cabotage. However, there were efforts on the Canadian side to secure a better investment regime for shipping (including guarantees for investors on the expropriation of assets) and minimum restrictions on the sale and re-flagging of vessels among NAFTA parties. In the run up to and throughout the NAFTA negotiations, the Canadian shipping industry hoped to get the US to agree to a waiver system (like that which exists in Canada to allow a foreign flag ship if no suitable Canadian one is available) and to remove the ownership provisions.<sup>7</sup> The US did not want to open maritime transport services to the dispute resolution process that was being set up under the NAFTA, because it wanted to be able to maintain its ability to engage in retaliatory action under the *Foreign Shipping Practices Act of 1988*.<sup>8</sup>

The structure of the NAFTA agreement was different than that of the CUSTA agreement; in CUSTA, coverage was determined by the activities listed. In NAFTA, all activities were covered by the investment and services chapters, unless specifically excluded. When NAFTA was signed, the agreement failed to deliver elimination of marine cabotage provisions because each of the countries specified marine cabotage in its exclusions.

Mexico and Canada struck an agreement on international shipping that excluded the US; Annex III, signed by Canada and Mexico, opened international shipping services to the flag of the other country. Furthermore, because the US failed to budge on protecting its cabotage traffic, Mexico preserved its domestic cabotage environment under Annex I Schedule of Mexico; this Annex reserves marine cabotage, towing, stevedoring, and investment over 49 percent in port facilities for Mexican nationals.

Canada always planned to reserve coasting trade for Canadians and used Annex II-CIII to restrict Canada's coasting trade to Canadian-flagged and crewed vessels. (Annex II reservations allow agreements with other nations to be better than the provisions in NAFTA only if the party has taken a most favoured nation reservation.)

In the "negotiation" of the reservations applicable to the agreement, Mexico implemented an Annex I reservation that allowed it to preserve its cabotage as a non-conforming restriction, which, if changed, could only be liberalized. In this eventuality, the new regime forms the floor for future activities within the NAFTA area. The US decided to exclude maritime transport under Annex II-U-IX. As a result, Canada invoked further reservations under Annex II-C-XIII. (Canada adopted a similar stance in the negotiations of its free trade agreement with Chile.)

Since then, the Jones Act has been amended very slightly by the Byrnes/Tollefson amendment,<sup>9</sup> to further preclude Canadian yards from providing repairs to US military vessels; this amendment does not prevent yards from supplying some component parts to US yards, although they may not include items such as anchors, propellers or propulsion shafts. The amendment did allow a Presidential waiver for national security and an exception for inflatable or rigid inflatable boats.<sup>10</sup>

Since the NAFTA negotiations, changes have been made to the ownership provisions applicable to Canadian domestic shipping via the *Canada Shipping Act, 2001*. Currently, a Canadian ship can be owned by a company with an

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7. There is an existing, but severely limited waiver process in the US. According to a 1990 memorandum of understanding among US Customs, Maritime Administration, Department of Defense and Department of Energy, the Jones Act may be waived by MarAd (with 48 hours to identify a suitable US flag vessel) during a national fuels emergency.

8. 46 U.S.C. app. § 1710a.

9. 10 U.S.C. Sec. 7309.

10. MarAd staff indicate there is also an exemption for passenger vessels under 13 passengers, but the origin of this authority was not identified.

established presence in Canada or by a Canadian or permanent resident or by a company incorporated in Canada or one incorporated in any country, if the terms of section 14(4) are met.<sup>11</sup> This secured the ability of Canadian ship owners wishing to operate competitively in international trades to do so from Canada. It has not altered the ability of any company, US or otherwise, to transform themselves into a Canadian company for the purposes of engaging in Canadian domestic shipping.

While it appears that Canada did not make the breakthrough at the NAFTA negotiating table that the shipping industry desired, it may be that Canadian economic interests could be better served by the continuation of US cabotage restrictions. To explain, there has not been a published study to determine where Canada's economic interests lie; for example, Canadian construction materials exported on Canadian (or foreign flag vessels working the transborder trade) may be sold because they have a cheaper delivered price than would be the case if they were transported on US vessels (Ward, 2003). Such an evaluation of Canada's wider economic interests is a pre-requisite to a considered negotiating position on a go-forward basis.

## WORLD TRADE ORGANIZATION AND THE GENERAL AGREEMENT ON TRADE IN SERVICES

During the General Agreement on Trade in Services (GATS) negotiations in the latter part of the 1990s, there was widespread agreement among the parties to maintain cabotage and remove it from this round of negotiations, returning to talks in 2000. With respect to maritime transport services more generally, the US declined to table an offer on maritime transport services and, consequently, Canada, the European Union, Japan and Australia withdrew their offers on further liberalizing **international** shipping services.

In the current Doha Round of the GATS countries can opt in to particular commitments and some commitments already exist in the areas of access to and use of port facilities, auxiliary services, and ocean transport. For many countries, including Canada, cabotage is still not on the table, although certain countries do want it discussed (New Zealand, Norway, and Panama among others). From a review of existing position documents, and in particular the background document by the Council for Trade in Services (WTO, 2001), it appears that there is a higher priority accorded to maritime safety and pollution prevention, through such tools as port state control, and to issues such as liner regulation and anti-competitive activities. International shipping has a higher priority for WTO attention than domestic cabotage restrictions. Liberalization of cabotage restrictions like the Jones Act appears unlikely through the GATS negotiations. For this reason, it is more likely that Canada could make progress on the cabotage rules bilaterally or within the context of future negotiations with NAFTA partners than through the GATS process.

## ASSESSMENT OF THE COST TO CANADIAN INDUSTRY

The last decade has been a difficult one for yards in Canada. Total revenues in the industry have fallen from C\$1.2 billion in 1992 to C\$563.3 million in 2001, an average decline of 7.8 percent every year (Industry Canada, 2002). In order to explore the cost to Canadian industry of the US cabotage restrictions, it is first important to understand the current state of the industry in North America and then globally. The leading buyers are not Canadian and neither are the leading sellers. Using a snapshot of the newbuilding orderbooks in both Canada and the US as of the summer of 2003, and examining the vessels on order by Canadian and US shipping interests, the situation can be clarified (Fairplay, 2003c).

Canadian owners are ranked 26th in the world (in terms of the deadweight tonnage owned, Table 8) and 27th in terms

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11. Section 14(4) allows foreign ownership of a Canadian flag vessel if there is a person in Canada responsible for every aspect of the operation of the ship, a Canadian incorporated subsidiary or a branch office of the foreign corporation or a ship management company incorporated in Canada.



**Table 8: LEADING OWNERS OF VESSELS AS OF DECEMBER 31, 2002**

Top Owners	Domestic Flag	Foreign Flag Total (000 DWT)		% Foreign
GREECE	44,850	105,011	149,861	70.07%
JAPAN	13,472	90,924	104,396	87.10%
NORWAY	27,138	30,959	58,097	53.29%
CHINA	22,680	21,623	44,303	48.81%
UNITED STATES	11,002	31,536	42,538	74.14%
GERMANY	7,232	33,518	40,750	82.25%
HONG KONG	13,207	24,527	37,734	65.00%
REPUBLIC OF KOREA	9,136	16,634	25,770	64.55%
TAIWAN	6,314	16,015	22,329	71.72%
SINGAPORE	12,627	6,765	19,392	34.89%
CANADA	2,632	3,355	5,987	56.03%

Source: UNCTAD (2004), *Review of Maritime Transport 2003*, Table 16; Canada ranks 26th in the 35 most important maritime nations based on vessel ownership as of December 31, 2002.

**Table 9: LEADING OWNERS OF VESSELS ON ORDER SUMMER 2003**

Rank (1)	Country of Domicile	No. of Ships	Total DWT on Order (2)
1	JAPAN	361	24,705,900
2	GERMANY	281	9,239,058
3	GREECE	257	22,341,180
4	UNITED STATES	186	4,065,894
5	UNKNOWN (3)	177	3,102,671
6	CHINA	115	7,297,934
7	ITALY	114	3,646,188
8	NORWAY	108	3,964,735
9	UNITED KINGDOM	105	5,599,054
10	NETHERLANDS	99	1,399,147
27	CANADA	25	1,313,165
Totals		2,932	133,712,669

Note: (1) Rank by number of ships

(2) DWT is an estimate by Fairplay, as building contracts are reported generally in GT (gross tons).

(3) Country of the owner is not disclosed by the yard.

Source: Fairplay (2003c), p. 2

of number of ships on order in the global orderbook (Table 9). Canadian interests have 25 vessels and 1.3 million DWT on order, accounting for approximately one percent of the vessels on order in the world. US owners are ranked fifth in

the world by DWT owned, and fourth on the orderbook; they currently have 186 vessels on order totaling 4.1 million DWT. Of these 186, 73 are offshore vessels; orders placed at US yards account for approximately three percent of the world orderbook.

While Canadian owners are ordering fewer vessels than their American counterparts, the vessels being ordered are larger, and all but five are clearly destined for Canadian-owned international shipping operations. Canadian international shipping corporations have a predilection for ordering from Japanese, Korean and Chinese yards, as Canadian yards are not at all competitive for this segment of the market. Only two of the vessels on order by Canadian shipping interests are definitely for use in Canadian coasting trades. The remaining three are being ordered from foreign yards for unknown use, and will either attract the 25 percent tariff on delivery or be used by those companies internationally. To try to understand the competitiveness of Canadian yards, it would be worthwhile to approach Clearwater, Husky Energy and Algoma Central Marine to determine where it is planned to deploy these three vessels (as all three companies do have international operations). If they are to be deployed domestically, why have the companies opted to purchase offshore as opposed to at home? The price difference may be instructive as to the “value” of the tariff in place.

As for the vessels being ordered in Canadian yards, these eight orders are very small, all under 1,000 DWT with the sole exception of an oil rig at the Halifax shipyard. Of greater interest, however, is that five of the orders from Canadian yards are destined for offshore owners, none of which is US-based. It appears that, for small vessels, Canadian yards are seen as competitive by Danish and Dominican shipping interests.

Is the industry competitive, and if so in which market(s)? Canada’s shipbuilding industry has long struggled in a very competitive world market. Many nations use subsidies to gain newbuilding contracts, a practice that has not been used in Canada for more than 20 years. Canadian shipbuilders have argued that, due to this, many vessels are purchased from shipbuilders with a subsidy program rather than from Canadian shipbuilders. In spite of this, Canadian yards have sold to the US market (Table 7), probably for US international operations or for Jones-excluded domestic operations. On the import side, even though non-NAFTA vessels are subject to a duty of 25 percent, except for fishing vessels over 30.5 metres, Canadian operators have clearly acquired vessels offshore rather than at home or in the US. The imports have included almost a complete spectrum of vessel types: fishing vessels, tankers, floating docks, production platforms, smaller cargo vessels, and tugs. The duty has simply not been effective in encouraging Canadian ship operators to buy at Canadian yards.

Furthermore, Canada has been adversely affected by the restrictive practices embodied in the myriad of US protectionist legislation already discussed. According to Industry Canada (2001a: 33, 41), another challenge to the Canadian shipbuilding industry is a potential labour shortage; shipbuilding requires highly skilled individuals and, although Canada has good training facilities, a lack of work pushes skilled students to the US. It is a vicious circle: students leave and then the labour shortage is worse when operators consider purchasing at home. In 2001, the Davie yard in Quebec and the Saint John yard in New Brunswick were the two largest, accounting for approximately 50 percent of Canadian capacity. Rationalization occurred again in 2003, with the closure of the Irving yard in Saint John (Underhill, 2003); the yard had been idle since it completed the fourth tug for the Panama Canal Authority in September 2002. This may not be the end of yard rationalization, and although capacity remaining is better utilized, the employment prospects continue to decline.

From 1986 to 1993, the Canadian government provided approximately C\$200 million for technology to help make Canadian yards more competitive, and capacity was rationalized by about 30 percent. Export Development Canada stepped up to the plate to assist the industry with competitive credit financing for export sales by the industry. Yet, according to Appendix 3, exports as a percentage of total shipments have grown very slowly, if at all, with the exception of what appears to be an unusual year, 1999, when exports to Brazil were exceptional and very high. Meanwhile,

imports have steadily grown, so that by 2001 imports comprised 60.2 percent of the apparent Canadian market. Again, the imposition of a tariff on non-NAFTA vessels is not serving the purpose of encouraging domestic shipbuilding but penalizing Canadian shipping interests.

On a positive note, the Canadian shipbuilding industry is proud of its innovativeness, quality of production and worker proficiency. The industry currently focuses on “high-value-added ships and structures” of less than 85,000 DWT (Industry Canada, 2001a: 5). Canada’s reputation and skill in the design and development of high technology self-unloading equipment is well regarded, although not particularly well known, in shipping circles. If the advantages of self-unloading technology were better marketed, more money might be spent ordering Canadian self-unloading vessels and less invested in financing port facilities in developing countries. In addition to the self-unloader, there are unique Canadian technologies that have been developed to solve the problems of Arctic ice and the shallow draft environment of the MacKenzie River; according to Industry Canada (2003a), Canadian shipbuilders see these technologies as a foundation on which to build Canada’s reputation.

What does the industry say it needs to survive? Of the approximately 2,000 ships that are built every year with prices between C\$25 and C\$40 million, the 10 largest Canadian yards argue that they (as a group) require slightly less than one percent of the world market (Industry Canada, 2001a: 12), a share close to what they currently have so more must have been in mind.

Although Canadian yards are operating in an increasingly difficult market, there are opportunities. In addition to the current market of repairing ships, there remains the potential represented by the market for vessel supply to oil and natural gas exploration on the East Coast as well as future prospects in the Arctic (Industry Canada, 2001a: 10). Yards on both the east and west coasts have been doing well of late (Peters, 2003; Daniels, 2003), although much of the work is refit and repair, as opposed to new buildings that would show up in the snapshot illustrated in Table 10. Furthermore, there has been a crack in the Jones Act armour as, according to Andrew McArthur, the Halifax shipyard has been allowed to do repair work on Jones Act vessels since 2000 (Peters, 2003).

## US IMPACTS

Since CUSTA, US waterborne domestic ton-miles have declined dramatically (Figure 1). US domestic traffic is increasingly moving by inter-city trucking, air and rail with waterborne transport demand slackening. By 2002, demand for waterborne capacity had declined to 75 percent of 1992 levels.

Therefore, one could expect that fewer vessels would be needed. How did US yards fare? Not well. Jin and Kite-Powell (2000) examined the performance of US shipyards using a shift-share analysis. They concluded that the large yards that survived did so by achieving a good product mix and being competitive in military contracts; those that did not adapt in terms of product mix or failed to acquire military contracts were closed or significantly reduced their operations. (Appendix 5 provides a list of the largest active yards in the US in 1982 and their status today, while Appendix 6 presents the list of yards, including many small ones, currently listed by the MarAd.) Commercial contracts have been few and far between.<sup>12</sup>

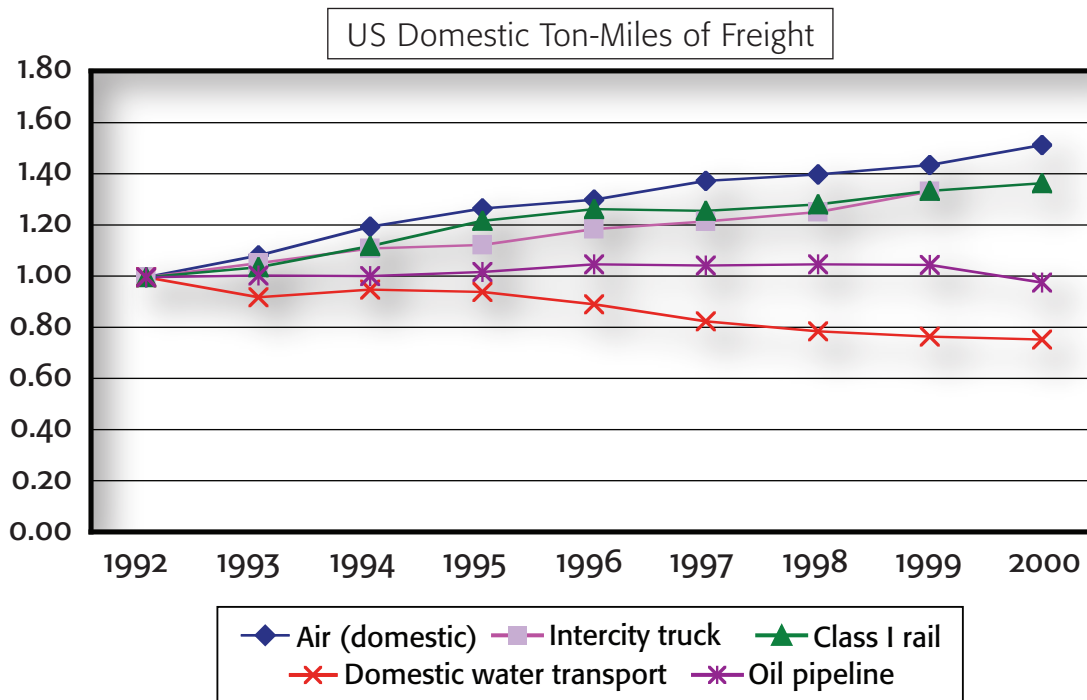
According to the global orderbook, there are 121 projects currently being built in US yards, and these include 17 vessels greater than 10,000 DWT and 21 of 2,001–10,000 DWT (Table 10). While three of these were for Brazilian interests, the significant orders were tankers for BP Shipping and Polar Tankers, probably to meet the *Oil Pollution*

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12. MarAd (1998: 16) reported that no commercial vessels were built in US yards 1987-89, between one and three a year 1990-1994, 10 in 1995, 14 in 1996 and 12 in 1997. There was much fanfare in August 2002, when Totem Ocean Trailer Express built the first commercial dry cargo vessel in the US in 10 years (*Marine Log*, 2002).



**Figure 1: US DOMESTIC TRANSPORT PERFORMANCE**



Note: The data is indexed so that 1992=1. There is no data available for 2000 for intercity trucking. Ton-miles are a measure of system demand.

Source: US Bureau of Transportation Statistics (2003), *National Transportation Statistics 2002*, Table 1-44.

**Table 10: A SNAPSHOT OF YARD NEWBUILDINGS (2003)**

Tonnage	In Canadian Yards		In US Yards	
	For Canadian Owners	For Foreign Owners	For US Owners	For Foreign Owners
UNDER 1,000 DWT	2	5		
1,000-10,000 DWT				
10,001 DWT PLUS		1		
TOTALS	2/8	6/8	121	
Tonnage	For Canadian Owners		For US Owners	
	In Canadian Yards	In Foreign Yards	In US Yards	In Foreign Yards
Under 1,000 DWT	2			
1,000-10,000 DWT		1		
10,001 DWT PLUS		22		
TOTALS	2	23	103	83

Note: (1) As it is difficult to separate non-US and US interests at US yards, and as there are also undisclosed interests buying at US yards, only the Canadian owner and Canadian yard tonnage breakdowns can be validated.

Source: Compiled from Fairplay (2003c).

*Act of 1990* requirements for tankers operating in US waters. The vast majority of the orders placed in US yards were for small vessels, with 30 under 1,000 DWT and 10 without any reported DWT. It can be concluded from reviewing the orderbook that the US shipbuilding industry faces similar challenges to those faced by Canadian yards, and is very dependent on domestic vessel and military orders. It is reported that to build a ship in the US is currently three times the cost of building one internationally (Knee, 2003).

Jon (2002: 537) notes that 75 percent of vessels built in US yards are military vessels. He suggests that US subsidies to commercial construction costs amount to 35 percent and that, without these subsidies, the industry would be abandoned.<sup>13</sup> However, the subsidies are only part of the package; the requirement to use US-built and US-crewed ships is key to their survival.

How likely is the current situation to change? In the past decade, support for reforming the *Merchant Marine Act of 1920* cabotage and US-build provisions has come from the Jones Act Reform Coalition, representing US and multinational farm, energy, mining, chemical and manufacturing companies. Much of the discussion is on the negative impact of the Jones Act on shippers and consignees in Hawaii, Alaska, Guam and Puerto Rico. Their efforts have not been effective, although some exemptions have been achieved over time for US territorial interests in the western Pacific Ocean.

Weighing in on the other side of the debate is the Maritime Cabotage Task Force, a lobby group formed in 1995. The Task Force represents over 400 US interested parties including ship and barge owners and operators, labour groups, shipbuilders and repair yards, marine equipment manufacturers and vendors, trade associations, pro-defence groups and companies in other modes of domestic transportation. They assert that the Jones Act is vital because it creates a US fleet that supports the nation's military in times of turmoil. Between 1995 and 2000, the Task Force helped defeat nine bills designed to amend or repeal the Jones Act (News Media, 2000-'03).

The cabotage rules came under pressure during a labour dispute that closed down US west coast ports in the fall of 2002. While foreign flag carriers requested that Customs issue administrative non-enforcement orders to ensure that commercial interests could be served during the lockout, MarAd intervened and instructed Customs to enforce the provisions of the Jones Act (Edmonson, 2002); national security was once again invoked.

This is the key barrier. The critical US position is one of national security: having American vessels crewed by experienced sailors is essential to support US military interests in times of conflict. Senator Daniel K. Innoye, one of the most vocal campaigners on the topic, believes that the US cannot rely upon foreign carriers to support its military in war times, and therefore maintaining the Jones Act is critical to the US in the age of terrorism.

The latest flutter on possible Jones Act reform came in the summer of 2003. On July 24, 2003, Hawaii Representative Ed Case introduced three bills aimed at amending the Jones Act. The first bill would have the effect of exempting all non-contiguous US locations from the Jones Act. The second bill would exempt only Hawaii, and the third bill would exempt agriculture and livestock from Hawaii from being covered by the bill (News Media, 2000-'03). Case argued that the Jones Act has led to a monopoly for both Matson Navigation and Horizon Lines with regards to shipping goods to Hawaii. Because of this, Hawaiian consumers pay more than they should for imports. This reform effort also failed.

In sum, there are a few small cracks in the Jones Act fortress: (1) MarAd recently supported the development and adoption of the Canada-US *Memorandum of Cooperation on Sharing Short Sea Shipping Information and Experience Between the Transportation Authorities of the United States of America and Canada*, signed July 2003 ([www.tc.gc](http://www.tc.gc)).

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13. In an effort to stimulate the shipbuilding industry in the United States, a number of MarAd programs have been implemented, and are detailed in Appendix 4.

ca). This initiative on short sea shipping might encourage some broadening of cabotage, but would not likely alter the preferential position accorded US shipbuilders. It does, however, provide an avenue for discussion of a NAFTA cabotage area. (2) A foreign-built cruise line was granted exclusive rights for passenger service in the Hawaiian Islands, because the two ships to be built for the route lay uncompleted in a bankrupt US yard. Precedent has been established, albeit on a temporary basis.<sup>14</sup> (3) There are exemptions for small passenger (under 12 persons) and rigid inflatable craft, Jones Act repairs (Peters, 2003) and a Presidential exemption for energy security. One could argue that national security offers a potential if the Canada-US *Smart Border Accord* were expanded to include such a possibility.

## WHAT HAS BEEN THE IMPACT OF THE JONES ACT?

In general, Canadian and American shipyards are trying to remain competitive in a market awash in unfair trading practices. The survival of companies in both countries is mainly dependent on good financing packages, superior quality and innovation. From the research conducted, it is evident that experts are constantly seeking new opportunities to revive the shipbuilding industry in both countries.

Jon (2002) suggests that there are two approaches that governments can take to support shipbuilding development. The first, the way Canada chose during the 1980s and 1990s, is to use the domestic industry to build vessels for military purposes. The Frigate and Coastal Defence programs are solid Canadian examples of this. (Indeed, according to Todd (1991), the government share of tonnage went from 2-3 percent in the 1970s to 96 percent in 1986; furthermore, Todd and Lindberg (1996) note that the US did not have a frigate building program.) The second is to formulate policies that directly or indirectly support the industry. Into this category fall credit facilities and guarantees, subsidies, and financial inducements to owners to build nationally. At present the 25 percent duty charged on imported vessels is a deterrent to investment in the domestic shipping industry. Whether ordering at home or abroad, ship owners operating in Canadian coasting trades pay more for their vessels than do their counterparts in other countries. The Canadian Government announced a Structured Financing Facility<sup>15</sup> in 2001 (and increased the level of support in 2003) to induce new construction and major conversions at Canadian yards; this facility provides interest rate support to foreign buyers but pales in comparison with the levels of subsidies available elsewhere.

The size of the Jones Act fleet in numbers of vessels is significant, but a closer look is necessary. Many of the vessels are, however, barges or extremely small (Table 11). This type of construction is not the stated target for Canadian yards. For US shipyards, the majority of substantial orders are to service military requirements, a market currently blocked to Canadian yards by the Byrnes/Tollefson amendment. The commercial fleet built in recent years by US shipyards services primarily the offshore industry (Table 12). If 10 percent of the 144 self-propelled steel-hull vessels over 300 net tons built in the 1988-2001 period had been built in Canada, it would have made life easier for the shipyards but probably would not have dented the capacity idle during that time. The towboat sub-market would be needed to provide a sufficient base for market development. However, towboats tend to be built close to their place of deployment, and the addition of towboats puts Canadian yards head-to-head with long-experienced US yards in this particular niche market. This also assumes that Canadian yards would be able to retain all the projects they had through the period, which might not have been the case if the market were completely open.

While it has proven difficult to assess the impact of US cabotage legislation on Canadian companies, the impact of US shipbuilding support on US consumer welfare has been studied closely. Hufbauer and Elliott (1993), using a partial

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14. The first part of the story can be found in the US Department of Transportation (2003). The saga continued into a debate over Senate 2004 appropriations and was captured by the *Congressional Daily* of 29 January 2004 and the General Accounting Office (2004). Senator McCain was reported in the *Congressional Daily* as objecting strongly to waiving the *1886 Passenger Vessel Services Act* for one foreign-owned company, Norwegian Cruise Lines. This case is particularly interesting to follow because all of the rhetoric for and against US protectionist legislation for both cargo and passengers has been repeated, and the current divisive nature of the arguments is clear.

15. The Facility's levels of support are within the OECD guidelines for export credits for ships.

**Table 11: A PROFILE OF THE JONES ACT FLEET (2002)**

Type	Total Vessels	Built 1988-2001
Self Propelled	3207	824
Under 1000 NT	2783	739 (1)
1000-1999 NT	57	12
2000-9999 NT	78	18
10000 and over	218	27
Tonnage NS	71	28
Towboats	4995	413
Barges		
Deck	4888	1430
Covered Dry Cargo	13552	4841
Open Dry Cargo	8794	4055
Other Dry Cargo	1907	384
Tank	3917	921

Note: (1) These 739 vessels can be disaggregated into 647 under 300 net tons (NT) and 92 over 300 NT.

Source: Created from US Army Corps of Engineers Navigation Data Centre (2002).

equilibrium analysis, estimated a net cost of the Jones Act to the American economy of US\$4.4 billion in 1990. In addition, four studies conducted by the US International Trade Commission (1991, 1995, 1999, 2002) all concluded that it is the US consumer who pays handsomely for the protection the Jones Act provides to the shipbuilding industry. The 1991 report stated that the Jones Act generated more than US\$653 million in profits for the shipping industry, but at a cost to consumers of billions of dollars a year. The 1995 study placed the cost at US\$2.8 billion, with a further decline to US\$1.3 billion in the 1999 study, and the 2002 study showed that the cost had dropped even further to US\$656 million. Francois *et al.* (1996: 192), in their discussion of the first two USITC studies, noted that maritime policies

*are on a higher plane of protection. The obfuscation is almost total. In the political arena, the supporters (and the associated administrative agencies) justify these policies as important defence and domestic programs that have little or no relevant implications for trade policy.*

Even more interesting than the cost of the Jones Act to American consumers and taxpayers is the fact that the cost is declining with each passing year. The 2002 study attributes this decline to the erosion in oceanborne Jones Act traffic of 34 percent over the period of 1996 to 1999 (USITC, 2002: 125).

According to these USITC studies, the losses experienced by US consumers are offset by employment retention by the shipping and shipbuilding sectors (see Table 13). Furthermore, the studies clearly show that if the sector were to be fully or partially liberalized, the price tag would be lost jobs in both the shipping and shipbuilding sectors. In the case of the former, foreign carriers (such as Canadian flag vessels) would penetrate routes reserved for US operators, while in the case of the latter, US-built ships would be replaced by foreign-built ones. There is no assurance that those foreign-built vessels would be sourced in Canada. Obviously, the job losses make liberalization a politically tough sell in the US, and to date employment issues have overshadowed the net welfare gains that could be had from liberalization of the coasting trade rules.

**Table 12: PROFILES OF US FLAG VESSELS OVER 300 NET TONS BUILT 1988-2001**

Type	Number	Size in Net Tons	Number
SUPPLY OR CREW BOAT	84	UNDER 1000	89
CONTAINERSHIP	16	1000+	12
FERRY	11	2000+	16
CHEMICAL /PRODUCTS TANKER	9	10000+	27
OTHER TANKER	4	TOTAL	144
OTHER DRY CARGO	21		
OTHER (EXCURSION)	1		
TOTAL	144		

Year of Build	All	Crewboat/Supply	Other
2001	5	3	2
2000	10	7	3
1999	27	24	3
1998	29	21	8
1997	16	11	5
1996	9	5	4
1995	9	2	7
1994	5	1	4
1993	3	1	2
1992	8	3	5
1991	9	4	5
1990	4	2	2
1989	2	0	2
1988	8	0	8
TOTAL	144	84	60

Note: Does not include 5 vessels of fiberglass or unknown construction, or the vessels of unknown tonnage shown in Table 11.

Source: Created from US Army Corps of Engineers Navigation Data Centre (2002).

**Table 13: ESTIMATES OF US LOSSES FROM LIBERALIZATION (CHANGE FROM 1999 BENCHMARK)**

Sector	Employment		Output		Imports		Exports	
	FTE	%	Value	%	Value	%	Value	%
Coastwise transportaton	-7,690	-84.1	-1,287	-70.4	1,498	NA	*	NA
Other water transportation	-650	-0.4	-131	-0.4	*	NA	24	0.1
Shipbuilding	-3,140	-3.1	-395	-3.1	-6	-3.0	-27	-3.0

Notes: NA=not applicable if benchmark is zero. \*= change is less than US\$500,000

Source: Table 5-4, USITC (2002), p. 126.

There are two key research questions that remain to be answered. (1) Have any vessels been built in the US and imported to Canada that could have been built in Canada? This would require a careful study of those imported to Canada from the US, and would require access to the Ship Register to identify them, followed by a survey of Canadian owners as to why a Canadian ship was not purchased. (2) Which ships built in the US could have been built in Canada? This cannot be answered because the answers would only be speculative, requiring more data than are publicly available. We do know that the US, in spite of tariff-free access to the Canadian market, has not exported significant numbers of ships to Canada; the major competitors of Canadian yards remain Asian.

To conclude, it has been extremely difficult to identify contracts that would have gone to Canadian yards from Canadian owners had the tariff on foreign-built ships been higher; only speculation is possible. Likewise, it is difficult to determine how many US owners would have placed orders in Canadian yards if Canadians had access to US domestic cabotage vessel orders. This implies that NAFTA would have had to extend Jones Act US-built provisions to read NAFTA-built. To achieve this concession, what would have been the trade-off? Open Canadian coasting trade vessels to US crews? Concede all offshore supply work to Gulf yards? It is not entirely clear, particularly in the absence of negotiation histories, what the reciprocal request would have been. What did Canada have to put on the table in return? As can be seen, given the absence of data available from secondary sources, any assessment of opportunity cost of the Jones Act is speculative at best.

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## THE GLOBAL INDUSTRY TODAY

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Japan is the global leader in shipbuilding today. Jon (2002) documented the decline and later rise of the Japanese yards since 1970 (see Table 14). Korea and China have grown increasingly dominant (see Tables 15 and 16 respectively). China continues to be an emerging shipbuilding power and ranks third today after Japan and South Korea. In 1995, the new Dalian shipyard came onstream with the capacity to construct vessels in the order of 250,000 DWT. The *Journal of Commerce* (2004) has reported that China had 10 percent of the ships built in 2003 and intends to capture 42 percent of the world market by 2012. Meanwhile, Fairplay (2003b) reports the Koreans plan to raise their 33 percent share to 40 percent by 2012. The Japan Maritime Research Institute (2003: 30) forecasts that after 2005, world shipbuilding demand will drop, and that China’s share of the world market will expand while both Japan and Korea will suffer a decline in export shipbuilding. It appears that the competition among the largest yards will intensify in the next few years.

**Table 14: SHIPBUILDING IN JAPAN**

Year	Domestic Ships		Export Ships		Total Ships	
	Ships	000 GT	Ships	000 GT	Ships	000 GT
1970	2,081	3,950	222	6,220	2,303	10,170
1975	1,010	2,610	517	12,610	1,527	15,230
1980	1,319	2,780	273	3,410	1,592	6,190
1985	817	2,750	401	6,160	1,218	8,910
1990	838	1,350	213	5,120	1,051	6,480
1995	593	820	282	7,870	875	8,680
2000	2,081	3,950	222	6,220	2,303	10,170

Source: Adapted from Jon (2002), Table 1: Trend of steel ships built in Japan, p. 542. GT (or gross tons) is a measure used by shipyards to measure work on order.



**Table 15: SHIPBUILDING IN KOREA**

Year	Domestic Ships		Export Ships		Total Ships	
	Ships	000 GT	Ships	000 GT	Ships	000 GT
1991	22	209	87	4,221	109	4,430
1992	5	104	89	4,463	94	4,567
1993	15	64	73	3,319	88	3,383
1994	8	17	107	5,153	115	5,170
1995	5	10	135	5,653	140	5,663
1996	-	-	170	7,798	170	7,798
1997	-	-	172	7,449	171	7,449
1998	2	2	161	8,633	163	8,635
1999	-	-	163	9,481	163	9,481
2000	2	18	178	6,029	180	6,047

Source: Adapted from The Korean Shipbuilders' Association as cited by Jon (2002), Table 3: Volume of newbuilding completions in South Korea, p. 543.

**Table 16: VOLUME OF NEWBUILDING COMPLETIONS IN CHINA**

Year	Number of Ships	000 GT	Percent of World Total
1994	144	1,079	5.5
1995	159	953	4.3
1996	138	1,102	4.3
1997	152	1,479	5.8
1998	154	1,446	5.7
1999	144	1,556	5.6
2000	101	1,484	4.8

Source: Adapted from Lloyd's World Shipbuilding Statistics, 2001 as cited by Jon (2002), Table 5: Volume of newbuilding completions in China, p. 546.

As well, Poland, Germany and Brazil all aspire to a high ranking in the industry. Furthermore, the Dutch, frustrated with the situation, have renewed pressure for subsidies in Europe (Kok, 2003) and the EU Shipbuilding Association is supporting measures to make Europe a significant player in the world market (Fairplay, 2003d). As the future will be difficult for those servicing larger vessels, and subsidy pressures grow, we can expect a more competitive climate for smaller yards including those in Canada, as larger yards aggressively seek business that would go to smaller yards.

The global shipbuilding environment will remain difficult for the foreseeable future. "Supply still outstrips demand and there are few indications that this situation will improve" (Commission of the European Communities, 2000: 3). The industry continues to be heavily subsidized. That is confirmed by the reports continuing to emanate from the Commission of the European Communities (2000) on the threats faced by EU shipbuilders in competition with builders in Korea, in particular. Korea's market share, at the time of the 2000 report, was more than 40 percent, and the Commission opted to deal with the Korean situation by continuing state aid to its own industry.

There is a long history in Europe of seeking IMF intervention in Korea, although the IMF reports that it has no mandate to deal with sector issues such as shipbuilding. In October 2002, Europe officially notified the WTO of its

request for a Panel under Article 6 of the WTO Dispute Settlement Understanding over unfair Korea shipbuilding practices. Europe has also repeatedly sought ratification by the US of the 1994 OECD *Agreement Respecting Normal Competitive Conditions in the Commercial Shipbuilding and Repair Industry* (OECD, 1994a). Given its concern over both, exemptions to existing EC regulation have been granted in order to support shipbuilding contracts for third parties in EU yards. While EU state aid ceilings for shipbuilding were set at 26-28 percent in the late 1980s, they dropped to 9 percent in 1992 (Commission of the European Communities, 2000: 21).

Intense competition has led to product specialization, with Asian yards building primarily tankers and bulk carriers, while European yards have focused on high technology vessels and cruise ships (Lavdas and Mendrinou, 1999). More important, the powerhouse European builders of the 1970s have not all maintained market position. As of June 2003, the top four European builders respectively were Poland, Italy, Germany and Croatia, and the UK had fallen to 12th place (Fairplay, 2003a). In 10 years, Europe's share of the world shipbuilding market has dropped from 25 percent to "as low as 5 or 6 per cent" in 2004 (Fairplay, 2003a: 20). To drive home the dire situation in Europe, Harland & Wolff, Belfast's famous builder of the *Titanic*, has refocused its business on project management (and Ireland's share of the shipbuilding market is less than half that of Canada's).

The export credit situation also remains difficult but, as will be discussed below, is no longer impossible. Vessel financing arrangements offered by non-OECD countries have generally featured better concessions than permitted under the 1994 OECD *Understanding on Export Credits for Ships* agreement (OECD, 1994b). Competition has moved to encourage even OECD countries to extend traditional eight-year financing terms to longer periods in order to attract those shipping businesses seeking vessel financing terms closer to the normal terms on offer by traditional vessel financing banks.<sup>16</sup> As well, the traditional ship mortgage base of 80 percent of the value of the ship has been extended in some jurisdictions to 90 percent, and the interest rate has been significantly lower (Jon, 2002: 536).

Jon (2002) notes that the shipbuilders of Japan and South Korea, by their participation in large conglomerates, have been able to draw on the resources of the other subsidiaries of the larger group to survive down cycles in the shipbuilding market. Cross-subsidization has been a key factor in their global competitive advantage. To counter this, Todd (1985) has noted that independent shipbuilding has survived, because the independent does not have to secure the financial support of the parent in a competition with other subsidiaries also seeking support.

From a Canadian point of view, there is no short-term promise of relief from the European stance on state aid to the industry, and no indication that the US will ratify the OECD agreement it signed in 1994. Given all of the above indications of intensifying competition and increasing protectionism, it is likely that competition will intensify further and more yards will fail in the global market.

On the other hand, in Canada, independents have fought hard and focused their businesses on niches that can be profitable and current financing for conversion and repair work done in Canadian yards for foreign owners is quite competitive. The importance of EDC financing is supported by Karlsen (2004), who reported that, for the 2001 conversion work on the foreign-owned, foreign flag vessel *Polar Star*, the EDC financing was sufficiently competitive that the work could be done in a Canadian yard.<sup>17</sup> On the new construction front, the Structured Financing Facility introduced in

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16. A vessel generally has an economic life of 20 years in salt water, and much longer in fresh. Dry bulk cargo vessels are acknowledged to have a shorter life than container ships and tankers, due to the stresses and strains of loading and unloading ores, in particular. In recognition of this economic life, bankers specializing in ship finance have extended credit to established customers for up to 12 years. The eight-year amortization period seems short when profits are under strain (based on research reported in Brooks, 1990)

17. The work was to convert a Norwegian icebreaker to a foreign-flag passenger cruise vessel for use in the Arctic, Antarctic and extreme cold tourism destinations. Mr. Karlsen reported that 12 yards in four countries were bidding on the project for the Halifax-based management company, Karlsen Shipping. The company was close to awarding the contract for the work to a foreign yard when the financing package was secured and the Canadian yard became competitive (Karlsen, 2004).



September 2001 has been key to the current good fortunes of Canadian yards, according to Daniels (2003).<sup>18</sup>

Market prospects for Canadian shipbuilders hoping to target further offshore development on Canada's east coast are uncertain. The world's offshore drilling market is expected to decline, with decreasing shallow water prospects in the Gulf of Mexico; a greater number of deep water wells is forecast globally and North America will have the highest share of the total drilling dollars spent (Smith, 2003). Yet the offshore industry has become reticent in placing new orders given current uncertainty. It is unclear what will happen to the demand for further offshore supply vessel construction to service the Atlantic east oil and gas wells, but it is not likely to be an area of explosive growth for Canada's east coast yards unless world oil markets become more unstable and new sources of oil are required.

South of the border, the US ferry and the tug/barge markets are "hot" at the moment. The key driver behind the latter is the aging of the Jones Act tanker fleet and the innovative construction designs US yards have developed to service this sub-market. There is no Canadian capability in the barge segment of the market (although there is tug capability); US tug and barge operations have a very unique flavour. As for US interest in high-speed ferries, orders have been placed for ferries in New York to meet post 9/11 transport requirements (to replace the devastated PATH system) and for a short passenger/vehicle route in Alaska. However, the Australian ferry designer, Incat, is licensing designs for its aluminum hull construction, high-speed ferries and, were Canadian yards to gain access to Jones Act markets, it is likely that high-speed ferries would be a growth opportunity. In fact, it provides an opportunity for Canadian yards to compete on new to-be-developed short sea routes in the Great Lakes as well as east and west coasts. Some US yards have already acquired licenses for this technology,<sup>19</sup> and Canadian yards might consider following suit once it is clear that this is a market with promise. The business case, however, has not yet been made.

The problem appears to be one of continuing excess capacity; it may well be that some of that capacity could be more usefully deployed if more effort were expended in selling Canadian expertise in self-unloading vessels for use in developing countries with inadequate port facilities.

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## LOOKING FORWARD: POLICY POSITIONS FOR THE FUTURE

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The ability to build positions for future negotiations must recognize that the arguments cannot be made on economic grounds alone. Market access (for shipbuilding, and more generally maritime transport) has been a highly politicized issue since the American Revolution. The interested parties have not altered their views in spite of the barrage of studies illustrating the high costs incurred by taxpayers in supporting a "US-built" stance. For example, the work of Hufbauer and Elliott (1993) and the US International Trade Commission (1991, 1995, 1999, 2002), already discussed, concluded that the cost to the US of US import restrictions on ships is high.

In the introduction, a question was asked and not answered: is the shipbuilding sector a part of the shipping (maritime transport) industry, the manufacturing (industrial) economy or a part of a nation's defence capability? It was proposed that the answer to the question predicts the support the industry will receive from its government. The US has long seen shipbuilding as part of the first and the third, and MarAd proudly reports that 75 percent of the ocean-going domestic fleet is "militarily useful."<sup>20</sup> It is clear that the development of and control of advanced weapons technology

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18. A review of the projects to 9 September 2004 posted on the Strategis web site shows that 11 projects have been financed and completed under the Facility, with three more in progress. Five of these were projects in excess of C\$1 million.

19. This includes Gladding-Hearn Shipbuilding and Nichols Brothers of Washington State. While the Australians cannot build for the Jones Act trade, both Incat and Advanced Multi-Hulls have been very quick to design vessels and license those designs for construction in US yards. Likewise, the Europeans too have sold designs to a number of US yards.

20. A reviewer of the draft version of this report questioned the strategic military purpose of the fleet reported in Table 11, the majority of which are small self-propelled vessels or barges; the author leaves that judgment to the reader.

is of substantial strategic importance to the US. On the other hand, Canada has long viewed shipbuilding as part of its industrial base, and certainly not part of its support for maritime transport. Todd and Lindberg (1996) note that Canada's yards and their capabilities match its naval role in the global military power game, that of a regional power-projection navy.

In the past five years, the Canadian government has been more supportive of the shipbuilding industry. Through Industry Canada, it has financially supported an industry-led study (Industry Canada, 2001), developed a policy framework for the industry (Industry Canada, 2001b) and included the industry in its technology roadmap exercise undertaken for a number of significant industries (Industry Canada, 2003a), as well as providing improvements to the Structured Financing Facility introduced in 2001 (Industry Canada, 2003b).

Canadian commercial shipping interests are free to pursue capital inputs globally, but if they are to be used in domestic shipping, they are notionally taxed (via tariff) as a residual support for the shipbuilding industry. The ordering of frigates and coastal vessels for military or coast guard purposes has been more politically than economically motivated. Now that the industry has gone through another consolidating shudder with the closure of the Irving yard in Saint John, what can be done to negotiate support for the remaining industry? There are two options: (a) seek to grow more business at home, and (b) secure greater market access by altering build provisions elsewhere.

The Canada Transportation Act Review Panel was appointed on June 30, 2000, to review Canadian transport policy, and in its report made two recommendations that addresses both these issues, albeit in reverse order:

*Recommendation 8.4*

*The Panel recommends that the government make clear to the government of the United States its preference for eliminating the restrictions on entry to domestic shipping in the Coasting Trade Act and offer to negotiate bilateral elimination of equivalent restrictions. (CTAR, 2001: 146)*

*Recommendation 8.5*

*The Panel recommends that the 25% duty on vessels built or purchased outside Canada be eliminated. (CTAR, 2001: 147)*

Recommendation 8.5 of the Panel notes that the tariff “amounts to an impediment to efficiency for Canadian carriers, distorting competition between domestic shipping and other freight modes, and impeding acquisition of specialized vessels needed for certain trades (notably Arctic resupply and development)” (CTAR, 2001: 146-147). The Panel and many carriers believe the tariff serves as a disincentive to invest in Canadian shipping and is not at a sufficient level to protect Canadian shipbuilding. Furthermore, as the same tariff consideration applies to Mexico, Chile, Costa Rica and others, additional future trade negotiations will further alter the landscape for the Canadian shipbuilding industry, particularly if they are with a nation having a strong and vibrant shipbuilding industry.<sup>21</sup>

Recommendation 8.4 suggests that Canada continue its bilateral and multilateral efforts at opening market access, more broadly than for just build provisions.

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21. The recent increase in the value of the Canadian dollar may well result in Canadian operators choosing to build in the US, or one of Canada's other free trade partners—Mexico, Chile, Costa Rica, or Israel.

## RECOMMENDATIONS FOR A CANADA-US BILATERAL

As may be now be evident, the cabotage restrictions embodied in the *Merchant Marine Shipping Act of 1920*, and subsequent legislation and amendments, appear to be an impenetrable fortress. Given current Jones Act restrictions, and the yard prices in US yards, US-built vessels are not particularly saleable in Canada; furthermore, once they have flagged out, it is difficult to bring them back under the protected umbrella provided by the US flag. Once built for US cabotage trade, they will stay in the protected US domestic trades (Smithers, 2004).

The Technology Roadmap (Industry Canada, 2003a) suggests that Canadian shipbuilders would be very competitive in the US because the labour rates run about 60 percent of US labour rates and there is a vibrant market for smaller vessels (tugs, towboats, barges, ferries, and patrol vessels) as was obvious from Tables 11 and 12. The research presented here indicates that this is true, but disagrees with the comments by Robert Allan (as quoted by Industry Canada, 2003a: 30):

*The problem at present is of course access to this market. As discussed previously, Canadian negotiators at NAFTA relinquished all rights to this potential market. What is needed is a viable strategy to gain access to this huge market, but it is obvious that something must be traded off for this access.*

Mr. Allan suggests that Canadian negotiators relinquished all rights when, in fact, the rights were never on the table. You cannot relinquish something you do not have. In fact, under CUSTA, Canada put the tariff on the table without securing all conditions associated with its implementation. Mr. Allan goes on to suggest (as quoted by Industry Canada, 2003a: 30):

*The paper's recommended approach is to trade all future Canadian warship-building requirements to the USA, in exchange for a relaxation of the Jones Act for Canadian commercial shipbuilders.*

*This would appear to be a win-win situation. At present Canada has no military shipbuilding capability. Further, our demand is so low as to make the periodic resurrection of this capability economically impractical. As our military capabilities and our total maritime defence are so intrinsically intertwined with those of the USA, it seems to make great sense in terms of commonality and compatibility to purchase all our future warship requirements from US builders who have a very large maritime defense industry complex. In contrast, the small number and capacity of Canadian commercial shipyards represent a very limited threat to US commercial builders, but access to that market would provide significant opportunities for our shipyards.*

The point made here is a valid one. With the closing of the shipyard in Saint John, the supplier of the 12 frigates that were the backbone of Canada's military program in the early 1990s, the trade-off could be considered. Perhaps it would be worthwhile to ask, what does Canada's military plan to build next and how long will our American colleagues have to wait for this, when they have their own yards to support? The US owns seven times the deadweight tonnage of Canada, and builds seven times the vessels but US yards build only three times the tonnage of Canadian yards. While Mr. Allan's proposal has merit, it has less likelihood of success than perhaps changes to support greater vessel ownership and creative vessel deployment by Canadians.

Appendix 7 presents the evaluation the US has made of cabotage restrictions in a number of key trading and maritime nations. While the original list is longer, the key countries of concern to Canada are presented. The Appendix shows

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Note: Chile offers a real alternative to Canadian and US yards, as Chile has a shipbuilding industry that can compete with Canada's for the provision of vessels to service the offshore (Smithers, 2004).

that domestic build restrictions are quite uncommon, while cabotage, crewing and ownership restrictions are more commonly seen. In fact, it may be easier to sway the US in negotiations on the argument that “build-at-home” provisions are not commonly imposed and that a secure perimeter does not require US-built to be maintained. However, given US government concern about adequate energy security in this century, tankers are likely the last area of cabotage protection the US will be prepared to negotiate. The key is perhaps one of building on Canadian niche capabilities and specific opportunities, like that afforded through increasing co-operation on short sea shipping, and developing a “regional seas” strategy on the commercial side to match an “external perimeter” strategy on the defense and customs sides.

It must be remembered that the existing government strategy of pursuing bilateral trade agreements, while it may be to the benefit of Canada as a whole, is not to the benefit of the shipbuilding industry. It results in greater competition for the industry than first suspected. With Chile and Israel, just to name two, now able to sell vessels into Canada tariff-free, and with the dramatic rise in the Canadian dollar, Canadian yards are likely to face continued competition in future.

## RECOMMENDATIONS FOR NAFTA II

What has been proposed for a Canada-US bilateral also has promise within the broader context of NAFTA. Mexico too has signed the *Memorandum of Cooperation on Short Sea Shipping*, and has indicated through NAFTA, by choosing an Annex I restriction for maritime-related activities, that there is potential for movement on cabotage and Mexican ownership in the sector. The key to securing this may be further support for Mexican trucking access, promised in NAFTA but not yet delivered. As noted above, an approach that focuses on an extended external security perimeter in the new North America holds more promise than most in negotiating broader access within an expanded protected perimeter.

While it is possible that US desire to secure its territory may introduce “perimeter thinking,” this is probably wishful thinking. Canada must decide whether a continued regime of protection, albeit in a larger market (i.e., a Fortress North America for shipbuilding), is more attractive than seeking more liberalized approaches in the broader global market. There is nothing to say that both paths cannot be pursued concurrently, but eventually the Government will need to decide what is in the country’s best interest and it may be that Canada’s best interests lie in a policy different from that the shipbuilding industry would want to see.

## RECOMMENDATIONS FOR MARITIME TRANSPORT NEGOTIATIONS

In a study undertaken by the OECD (2001: 11) it is stated that

*Cabotage is recognized as being important to many countries. However the effectiveness of cabotage in preserving employment and national fleets has been questioned, and cabotage regulations have been relaxed within the European Union without obvious downside costs.*

Access controls in Europe have been significantly liberalized over the past decade, to the point where ships of any EU flag may now participate in the domestic marine trades of any other Member State. Within Europe, each country may impose crew nationality requirements, vessel ownership requirements, and fiscal requirements on owners. In addition, States that retain some restriction on access for foreign vessels usually maintain a waiver system based on the condition of non-availability or unsuitability of a national flag (or in some cases EU flag) ship.

Canada has already chosen its multilateral position, and one that makes considerable sense. It supports the OECD *Understanding on Export Credits for Ships*, and has honored that position within its current Structured Financing Facility. It continues to press for US ratification of the Understanding, and negotiate within the Doha Round of the GATS for those aspects of shipping and shipbuilding that are on the table. A unilateral approach would not serve any useful purpose as long as unfair practices are the chosen path of others.

## FINAL COMMENTS

The Canadian shipbuilding industry has no doubt suffered because of the marine cabotage protection in place in the US and elsewhere. Opportunities do remain, however. It is the author's belief that a better business case could be made with the international financial institutions to support the acquisition of self-unloading technology than to continue building dock facilities in the poorer nations of the globe. For many, access to transport for bulk goods to/from remote archipelagic states would be a useful development that could support the industry that has unique technology to sell. More expensive self-unloaders are an inexpensive alternative to costly port infrastructure investments; a strong case may be made to the World Bank to think about this Canadian technology as an alternate to port investment. (This can be pursued by industry independent of government policy on shipbuilding.) Like the Australians, Canadian yards can engage in key component construction with licensed hull designs as a counter to the greater competitive pressure anticipated for the coming decade, and the forecasted decline in orders for both traditional vessels and those serving the offshore oil and gas market.

Furthermore, it is clear from looking at the trade statistics that Canadian yards are securing some contracts from buyers in other countries. This business is unreliable but has managed to provide some support for the industry; while it may be Dominica and Denmark at present, sales have also been made to Kazakhstan, Panama, France, Brazil, Turkey and so on. Canadian yards may not be competitive in the mainstream business of tanker, dry bulk and containership construction, but have found niches in small boats, ferries, and offshore support vessels.

The existence of the shipbuilding tariff has been of little value to the shipbuilding industry, and it has given rise to serious market distortions in the Canadian marine transport market. No other Canadian transportation mode is required to pay a similar duty on imported capital assets. The high cost of acquisition of ships, either through domestic construction or payment of duty, damages the competitive position of Canadian domestic shipping in relation to alternative international trade movements. Furthermore, the question about how much that currently moves by truck and rail could be switched to the more environmentally friendly marine mode cannot be answered while the modal distortion remains.

Hodgson and Brooks (2004: 74) have concluded:

*Equally clear, however, is the fact that it cannot just be removed, since industry has long since adjusted to its existence, and any removal of the tariff would cause significant commercial pain and difficulty for those who have already made the asset investment, since any ships subsequently imported without payment of duty would have a significant competitive advantage over ships either built in Canada with no assistance provided, or foreign built and duty paid. In this respect, it is very clear that a complex phase-in period, or tax credit equivalent, would need to be designed to effect the transition. Without such a phase-in, the industry will be worse off. This does not preclude the need for the decision to be taken, even if the implementation of the decision may be spread across a number of years.*

There is a further problem with the tariff that merits consideration. Canadian ship owners, not only faced with a market distortion that is not in their favour, must also face an additional burden under the existing market situation: banks will not view the tariff as part of the purchase price of the vessel, and so there is no bank financing available to support the acquisition. The 25 percent tariff on an imported vessel must come from the retained earnings or the acquisition year's cash flow, with a chilling impact on investment in vessels. Furthermore, Fred Smithers of Secunda Marine (Smithers, 2004) has estimated that for his investments in vessels to service the offshore, meeting Canadian Coast Guard standards on the imported vessel can add as much as 25 percent more to the base cost of the vessel. It is unclear why, when there are global vessel standards supported by the highest quality classification systems, Canadian regulators require that unique standards be met that, in addition to making Canadian flag vessels safe, also make



them significantly more expensive. These standards are not applicable to those operating in the offshore industry in other jurisdictions, thereby again raising the cost of extraction of the resource higher than may be necessary to ensure environmental security is met.

If Canada was to remove the tariff or alter the access restrictions on foreign vessels, it must be remembered that some of those foreign vessels have the ability to compete unfairly in the Canadian marketplace. Norway has a very modern fleet, built in heavily subsidized shipyards and currently operating in a protected market. It would be unfair to force Canadian owners to compete against those built under subsidy without some adjustment period, or compensation for investment already made at higher than market costs; as the majority of yards globally appear to enjoy state aid in some form or other, time is likely the best healer of this wound, more so than a tariff.

While it was not the intention of the paper to examine what shipbuilding policy is in Canada's widest economic interest or whether the strategic military or political interests of Canada might be better served by financial support for the industry, this research should also be done. Furthermore, the paper does not explore how important the presence of ship repair capacity is to the competitiveness of Canadian ports; this too is an avenue that requires greater exploration. These research issues aside, this paper has painted a picture of an industry that might benefit from policy inclusion in Canada's bilateral and multilateral trade negotiations, as noted in the previous section.

There are other opportunities as well. Canada, the US and Mexico have recently signed a *Memorandum of Co-operation on Short Sea Shipping*. It is this area where Canada has the opportunity to propose an expansion of the security perimeter (a winning proposal for the US given its concerns about a porous Canada-US border) and, simultaneously, protection of NAFTA-trades for NAFTA-vessels. It has been suggested that a cabotage waiver system within NAFTA might work (*Lloyd's List*, 2004). As Canadian yards are not currently being protected by the tariff imposed on imports, do very little newbuilding business for Canadian owners, and are relegated to niches in the current business climate, there is very little to lose. It is suggested that this route affords more promise than is evident in multilateral fora on cabotage liberalization. The greatest promise, however, comes from a "regional seas" policy position and a secure external perimeter for NAFTA.

**POSTSCRIPT:** Since completing the research, the Canadian government has lifted the duty on offshore rigs as a measure of support for offshore energy development.

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## APPENDIX 1: SPECIFIC SUPPORT PROGRAMS IN THE US IN 1984

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### DIRECT SUBSIDIES

**Construction Differential Subsidy (CDS).** A subsidy paid to shipyards to cover the difference between the cost of building a ship in the United States and building it abroad.

**Operating Differential Subsidy (ODS).** A subsidy paid to ship operators to cover the difference between the cost of operating a ship under the US flag with a US crew and the cost of operating under a foreign flag with foreign crews.

### CARGO RESERVATION

**Cabotage.** All cargo shipped by water from one US port to another US port must be carried in US-flag ships, built in US shipyards, and crewed by US citizens.

**Military Cargoes.** The Military Transportation Act of 1904 requires that all supplies for the US armed services must be carried in US-flag ships.

**Government Impelled Cargoes.** At least half of all exports resulting from activities of government agencies such as the Export-Import Bank must be shipped in US-flag ships. The formula of 50 percent participation by US-flag ships is applied by several different cargo preference laws, including ones covering such diverse commodities as agricultural products, strategic petroleum reserves, and military assistance exports.

### GOVERNMENT PROCUREMENT AND OPERATION OF CARGO SHIPS

**Military Sealift Command (MSC).** Not only is the Department of Defense the largest single customer of the privately owned US shipping industry but it also operated its own fleet of government-owned and chartered ships, a fleet numbering 133 ships as of April 1984.

### TAX AND FINANCING SUPPORT

**Title XI Ship Mortgage Guarantees.** Title XI of the Merchant Marine Act of 1936 authorizes the government to guarantee up to 87.5 percent (75 percent for ships built with CDS) of the purchase price of ships built in US shipyards. The total contingent liability limit for this program has been successively raised over the years and is now \$12 billion (but about \$2.5 billion is reserved for Ocean Thermal Energy Conversion and fisheries program).

**Capital Construction Fund (CCF).** Established by the Merchant Marine Act of 1970, this program allows deferral of federal taxes on funds deposited in the CCF and on funds withdrawn if they are used to build or reconstruct certain ships in US shipyards or to acquire US-built ships. In the 1971-1982 period, \$2.4 billion was deposited in and \$2.0 billion was withdrawn from this fund.

**Investment Tax Credits.** Shipowners are entitled to investment tax credits for funds invested in ships in the same way that businessmen in other industries are entitled to such credits for investment in new capital equipment.

Source: Congressional Budget Office (1984), p. 33.

## APPENDIX 2: KEY CANADIAN YARDS IN 1980 AND 2003

1982 (1)	Status 2003 (2)
BRETON INDUSTRIAL MARINE, NOVA SCOTIA	OPEN (NORTH SYDNEY MARINE)
FERGUSON INDUSTRIES LTD., NOVA SCOTIA	SOLD 1984; REBORN IN 1986; NOW PART OF NORTH SYDNEY MARINE-PICTOU INDUSTRIES
HALIFAX INDUSTRIES LTD., NOVA SCOTIA (INCLUDING DARTMOUTH MARINE SLIPS)	HALIFAX SHIPYARD, OPEN (OWNED BY IRVING; DARTMOUTH MARINE SLIPS HAS BEEN CLOSED)
GEORGETOWN SHIPYARD INC., PEI	PURCHASED BY IRVING 1994; NOW EAST ISLE SHIPYARD; OPEN
SAINT JOHN SHIPBUILDING AND DRY DOCK CO. LTD., NEW BRUNSWICK (OWNED BY IRVING)	CLOSED SEPTEMBER 2003
MARYSTOWN SHIPYARDS LTD., NEWFOUNDLAND (PROVINCIAL CROWN CORPORATION)	SOLD AND RE-SOLD; OWNED KIEWIT OFFSHORE SERVICES, A SUBSIDIARY OF A US PARENT
NEWFOUNDLAND DOCKYARD, NEWFOUNDLAND (OWNED BY C.N. MARINE NOW MARINE ATLANTIC)	SOLD BY MARINE ATLANTIC 1997; NOW OWNED BY THE BURRY GROUP OF CLARENVILLE AND THE PENNY GROUP OF ST. JOHN'S AS ST. JOHN'S DOCKYARD; OPEN
DAVIE SHIPBUILDING, QUEBEC (CANADA'S LARGEST SHIPYARD)	OPEN; VARIOUS OWNERS; NOW OWNED BY A US CONSORTIUM OF SYNTEK TECHNOLOGIES AND TRANSNATIONAL CAPITAL VENTURE
MARINE INDUSTRIES LTÉE., QUEBEC	STATUS AFTER 1988 NOT KNOWN
VICKERS CANADA INC., QUEBEC	STATUS NOT KNOWN
COLLINGWOOD SHIPS, ONTARIO (OWNED BY CANADA STEAMSHIP LINES)	CLOSED BY CANADIAN SHIPBUILDING AND ENGINEERING LTD.
PORT WELLER DRY DOCKS, ONTARIO (A DIVISION OF UPPER LAKES SHIPPING LTD.)	OPEN (CANADIAN SHIPBUILDING AND ENGINEERING LTD.)
ALLIED SHIPBUILDERS LTD., BRITISH COLUMBIA	OPEN
BEL-AIRE SHIPYARD LTD., BRITISH COLUMBIA	RESCUED 1984; STATUS SINCE UNKNOWN
BURRARD YARROWS CORP., BRITISH COLUMBIA	OWNED BY VANCOUVER SHIPYARDS AND ALLIED SHIPBUILDERS LTD. (ITS FLOATING DRYDOCK WAS TRANSFERRED TO VANCOUVER SHIPYARDS IN 1991)
RIV-TOW SHIPYARD LTD., BRITISH COLUMBIA	OPEN, RIVTOW MARINE INC, A SMIT COMPANY
VANCOUVER SHIPYARDS, BRITISH COLUMBIA (OWNED BY GENSTAR)	OPEN (VANCOUVER SHIPYARDS CO. LTD OF THE WASHINGTON MARINE GROUP)

Sources: (1) Shepherd, C.S.M. (1983), pp. 13-27.

(2) <http://strategis.gc.ca>, Canadian Company Capabilities I003 and various other news and personal interview sources to verify current status. Over the years, many of these yards were sold and resold and current status was not easily verified.

**APPENDIX 3: APPARENT CANADIAN MARKET FOR SHIPBUILDING AND REPAIR INDUSTRY (IN C\$ MILLIONS)**

Year	Total Shipments	Exports	Domestic Shipments	Imports	Apparent Cdn Market	Imports as % of ACM	Exports as % of Total Shipments
	A	B	C:A-B	D	E:C+D	F:D/E	G:B/A
1994	969.5	44.6	924.9	25.4	950.3	2.7%	4.6%
1995	964.8	19.0	945.8	80.2	1,026.0	7.8%	2.0%
1996	730.5	17.0	713.5	10.1	723.6	1.4%	2.3%
1997	503.5	18.0	485.5	36.8	522.3	7.1%	3.6%
1998	393.2	25.8	367.4	278.4	645.9	43.1%	6.6%
1999	573.8	184.9	388.9	66.5	455.4	14.6%	32.2%
2000	823.0	42.2	780.8	556.7	1,337.5	41.6%	5.1%
2001	546.2	56.1	490.1	740.6	1,230.8	60.2%	10.3%

Source: Statistics Canada as cited by <http://strategis.ic.gc.ca>, accessed October 8, 2003.

*Title XI Loan Guarantee Program.* Administered by the Secretary of Transportation through the Maritime Administrator, the program provides for a full-faith and credit guarantee by the US Government of debt obligations issued by US or foreign shipowners for the purpose of financing or refinancing either US-flag vessels or eligible export vessels constructed, reconstructed, or reconditioned in US shipyards; or by US shipyards for the purpose of financing advanced shipbuilding technology. In 2002, Title XI applications totaling \$225 million in loan guarantees were approved for projects covering construction of 22 vessels.

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## APPENDIX 4: US MARINE SUPPORT PROGRAMS IN PLACE IN 2003

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**National Maritime Resource and Education Center.** MarAd established the center as the Government's commercial shipbuilding advocate designed to assist US shipbuilding and allied industries in improving their competitiveness in the international commercial market. NMREC's principal missions are to promote elimination of unnecessary regulation, encourage development and use of consensus technical standards for the maritime industry, and support US participation in both national and international standards-writing organization. Under NMREC, the agency also established the Marine Industry Standards Library to provide technical assistance to US shipbuilders, ship repair facilities, and marine equipment suppliers in obtaining and using copies of domestic and international industry standards. The center also sponsors conferences to assist the agency in engaging in outreach to the shipbuilding industry by providing information and market leads to assist in increasing international sales.

**Capital Construction Fund.** The fund assists operators in accumulating capital to build, acquire, and reconstruct vessels through the deferral of Federal income taxes. The fund enables operators to build vessels for the US foreign trade, Great Lakes, noncontiguous domestic trade, and the fisheries of the United States. The fund also aids in the construction, reconstruction, or acquisition of a wide variety of vessels, including containerships, tankers, bulk carriers, tugs, barges, supply vessels, ferries, and passenger vessels. Since the program was initiated in 1971, fund holders have deposited \$7.9 billion in CCF accounts, and withdrawn \$5.8 billion for the modernization and expansion of the US merchant marine. During calendar year 2001, \$336.6 million was deposited into these accounts. Approximately 139 companies were parties to CCF agreements as of December 31, 2001.

**Construction Reserve Fund.** The CRF encourages upgrading of the American-flag fleet. The program allows eligible parties to defer taxation of capital gains on the sale or other disposition of a vessel if net proceeds are placed in a CRF and reinvested in a new vessel within three years. The CRF is used predominantly by owners of vessels operating in coastwise trades, the inland waterways, and other trades not eligible for the CCF program. During 2001, 22 companies participated in the CRF with total deposits of \$44.3 million.

**Maritime Energy and Clean Emissions Program.** This program is designed to accelerate the implementation of energy efficiency and exhaust emission reduction technology through partnerships with the US maritime industry. A five-year program was developed in 2001 and the program contains three major elements: technology demonstration projects, studies, and industry outreach. The primary objective of the program is to demonstrate that air emissions can be reduced by 90 percent by 2005.

Source: <http://marad.dot.gov/Headlines/MAR-700factsheet.html>, accessed September 21, 2003.

## APPENDIX 5: ACTIVE US SHIPBUILDING BASES, BY REGION, 1982 AND STATUS BY 2003

Shipyard	Employees 1982	Status 2003
<b>Atlantic Coast</b>		
Bath Iron Works	8,464	Active
Bethlehem Steel, Sparrows Point	809	Liquidated Nov. 2003
General Dynamics, Electric Boat Div.	24,550	Active
General Dynamics, Quincy SB Div.	2,285	Sold 1986; resold, closed.
Maryland Shipbuilding & Drydock	912	Now a car terminal
Newport News Shipbuilding	25,983	Active
Norfolk Shipbuilding & Drydock	3,810	Active
Pennsylvania Shipbuilding Co.	850	Closed 1989
<b>Gulf Coast</b>		
Alabama Dry Dock & Shipbuilding	127	Active
Avondale Shipyards	5,659	Active
Bethlehem Steel, Beaumont	700	Now a rail car plant
Equitable Shipyards	150	Bought by John Dane III 2000
Halter Marine Services	1,526	Sold and resold; active
Ingalls Shipbuilding Division	10,126	Active
Levingston Shipbuilding	612	Closed 1985
Tampa Ship Repair & Dry Dock	454	Active
Todd Shipyards, Galveston	517	Both sold and resold; owned
Todd Shipyards, Houston	293	by First Wave and in operation
<b>Pacific Coast</b>		
Lockheed Shipbuilding & Construction	3,253	Sold; now closed
National Steel & Shipbuilding Co. (NASSCO)	4,948	Active
Tacoma Boatbuilding Company	2,500	Sold; then closed
Todd Pacific Shipyards, LA Div.	3,650	No employees 1997
Todd Pacific Shipyards, Seattle Div.	4,037	Active
<b>Great Lakes</b>		
American Ship Building, Lorain	183	Sold; now a scrapyards
Bay Shipbuilding	683	Active
Marinette Marine Corp.	591	Active
Peterson Builders, Inc.	573	Sold; now condominiums
<b>Total Active Shipbuilding Base</b>	<b>108,245</b>	

Source: The list of yards and employees is taken from Congressional Budget Office (1984), p. 40. Active indicates they are listed on MarAd's list of yards, Appendix 6 of this report. Other notes come from various news sources used to track down the current status of the yards in the fall of 2003.



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## APPENDIX 6: MAJOR US YARDS 2003, BY REGION

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### EAST COAST

ACME Repair Co. Inc.  
Atlantic Marine  
Baltimore Marine Industries  
Bath Iron Works  
Caddell Drydock and Repair Inc.  
Colonna's Shipyard Inc.  
Derecktor Shipyards  
Detyens Shipyards, Inc.  
Earl Industries, L.L.C.  
Electric Boat Corporation  
Ellicott International  
General Dynamics  
Gladding-Hearn Shipbuilding  
Holmes Brothers Enterprises, Inc.  
Kvaerner Philadelphia Shipyard  
Lyon Shipyard, Inc.  
Marine Hydraulics International, Inc.  
May Ship Repair Contracting Corp.  
Metal Trades, Inc.  
Metro Machine Corporation  
Moon Engineering Company, Inc.  
Newport News Operations, Northrop  
Grumman Norfolk Shipbuilding & Drydock Corp.  
North Florida Shipyard, Inc.  
Promet Marine Services Corporation  
Southeastern New England Shipbuilding Corp.  
Tecnico Corporation  
United States Marine Repair  
Washburn & Doughty Associates, Inc.

### INLAND

Jeffboat LLC  
National Maintenance & Repair, Inc.

### NON-CONTIGUOUS US

Marisco, Ltd.  
Southwest Marine United States Marine Repair

### GULF COAST

A&B Industries of Morgan City  
Alabama Shipyard, Inc.  
Austal USA  
Avondale Operations - Northrop Grumman  
Bender Shipbuilding & Repair Co., Inc.  
Bludworth Marine LLC  
Bollinger Shipyards, Inc.  
Buck Kreihs Co., Inc.  
Burton Shipyard, Inc.  
Conrad Industries, Inc.  
Dixie Machine, Welding & Metal Works  
Eastern Shipbuilding Group  
Edison Chouest Offshore  
Elmwood Drydock & Repair, Inc.  
First Wave/Newpark Shipbuilding  
Freeport Shipbuilding, Inc.  
Friede Goldman  
Gulf Copper Manufacturing Corp.  
Gulf County Shipbuilding, Inc.  
Gulf Marine Repair Corp.  
Harrison Bros. Dry Dock & Repair Yard, Inc.  
Hendry Corporation  
Horizon Shipbuilding, Inc.  
Houston Ship Repair, Inc.  
Ingalls Operations - Northrop Grumman  
Intercoastal Marine Repair, LLC.  
International Ship Repair and Marine Services, Inc.  
John Bludworth Shipyard, L.L.C.  
Keith Marine, Inc.

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## APPENDIX 6: MAJOR US YARDS 2003, BY REGION (CONT'D)

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Kennedy Ship and Repair, LP

LeTourneau, Inc.

Marine & Industrial Repairs

Marine Inland Fabricators

North American Shipbuilding

Ocean Technical Services, Inc.

Seacraft Shipyard Corporation

Seward Ship's Drydock & Ship's Chandlery

Southwest Marine

Steiner Shipyard, Inc.

Stevens Towing Company, Inc.

Sun State Marine Services Inc.

Swiftships Shipbuilders, LLC

Tampa Bay Shipbuilding & Repair Co.

Textron Marine & Land Systems

The Great Lakes Towing Company

Trinity Marine Products, Inc.

United States Marine Repair

VT Halter Marine, Inc.

### GREAT LAKES

Bay Shipbuilding - Manitowoc Marine Group

Cleveland Shiprepair - Manitowoc Marine Group

Fraser Shipyards, Inc.

Manitowoc Marine Group

Marine Builders, Inc.

Marinette Marine - Manitowoc Marine Group

Metro Machine Corporation

Nicholson Terminal & Dock Company

Toledo Shiprepair - Manitowoc Marine Group

### WEST COAST

All American Marine, Inc.

Allen Marine, Inc.

Bay Ship & Yacht Company

Cascade General Inc.

Continental Maritime - Northrop Grumman

Dakota Creek Industries, Inc.

Diversified Marine, Inc.

Everett Shipyard, Inc.

Foss Maritime Gunderson Inc.

International Marine Contractors, Inc

Kvichak Marine Industries

Lake Union Drydock Company

Mar Com, Inc.

MARCO Shipyard

National Steel & Shipbuilding Company

Nichols Brothers Boat Builders

Pacific Ship Repair & Fabrication, Inc.

San Francisco Drydock, Inc.

Southwest Marine

Todd Pacific Shipyards Corporation

United States Marine Repair

Ventura Harbor Boatyard Inc.

Western Towboat Company

Westport Shipyard

Source: [www.marad.dot.gov/nmrec/links/usshipyardsr.html](http://www.marad.dot.gov/nmrec/links/usshipyardsr.html). Accessed Sept. 21, 2003

## APPENDIX 7: CABOTAGE AND LOCAL-BUILD PROVISIONS (SELECTED COUNTRIES 2001)

Country	Domestic Construction Provisions	Ownership Restrictions	Crewing Requirements	Cabotage
UNITED STATES	YES	YES	YES	YES
CANADA	NO	(3)	YES	YES
AUSTRALIA	NO	NO	YES	YES
BELGIUM	NO	NO	YES	NO
BRAZIL	YES	YES	YES	YES
CHILE	NO	YES	YES	YES
CHINA	NO	YES	YES	YES
DENMARK	NO	YES	YES	(2)
FINLAND	NO	YES	YES	YES
FRANCE	NO	(3)	YES	YES
GERMANY	NO	NO	(3)	YES
GREECE	NO	YES	YES	YES
ITALY	NO	NO	(3)	YES
JAPAN	NO	YES	YES	YES
MALTA	NO	NO	(3)	YES
MEXICO	NO	YES	YES	YES
NETHERLANDS	NO	YES	(3)	(2)
NEW ZEALAND	NO	YES	YES	YES
NORWAY	NO	YES	NO	(2)
PANAMA	NO	NO	NO	(2)
SOUTH KOREA	NO	YES	NO	YES
SPAIN	YES	(1)	YES	YES
SWEDEN	NO	YES	(3)	YES
UNITED KINGDOM	NO	NO	YES	(2)

Notes: (1) No information provided.

(2) Countries that do not exclude foreign vessels but do have certain restrictions

(3) No formal requirement, but some minor restrictions.

Source: Selected elements from Maritime Administration (2001), *By The Capes Around the World: A Summary of World Cabotage Practices*, February, p.4.

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## PUBLICATIONS ON TRANSPORTATION FROM THE AIMS LIBRARY

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*Atlantica and Trends in World Trade*, by Brian Lee Crowley and Stephen Kymlicka

*Shipping Out: The Development of a Gateway Hub at the Port of Halifax*, by James D. Frost

*Ideas Matter*, “Atlantica: Two Countries, One Region”

*Characteristics of Tomorrow’s Successful Port*, by Michael C. Ircha

*Port-Ability: A Private Sector Strategy for the Port of Halifax*, by Charles Cirtwill, Brian Lee Crowley and James Frost

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